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EDITORIAL

THE COLLEGE OF PHYSICIANS AND SURGEONS OF SOUTH AFRICA

It was in October 1950 that the Federal Council of the Medical Association of South Africa decided at its meeting in Johannesburg to adopt a recommendation of its Sub-Committee on Post-Graduate Education and Examination, which read: 'That Council recommends that a College of Physicians and Surgeons be established on a non-profit company basis to conduct, *inter alia*, examinations for qualifying diplomas and for higher diplomas in general medicine'. As a corollary to this, the Council further unanimously resolved:

'That whereas Federal Council has approved in principle of the establishment of a College of Physicians and Surgeons and whereas the establishment of such a College would be greatly helped if it were organized by a body like the Medical Association of South Africa, Federal Council should sponsor the establishment of a College of Physicians and Surgeons, and that it should appoint a Committee of Members and Fellows of recognized Colleges to work through and in conjunction with the Head Office of the Association until such time as the College has reached a stage where it can conduct its own independent affairs. Further, that Federal Council agrees to utilize the organization of the Medical Association of South Africa to establish the College, and that it advance sums to the College on loan until such time as the College should reach independent financial status.'

At its next following meeting the Federal Council appointed the personnel of its 'Sub-Committee to Establish a College of Physicians and Surgeons for South Africa'. While the members represented all the Provinces of the Union, half of the Committee was appointed from men resident in Cape Town. This was done in order that they might confer with the Association's lawyer, Mr. H. Boehmke, to draw up the proposed Constitution for the College. The constitutions of existing colleges throughout the English-speaking world were examined, and after months of work a draft Constitution was prepared based to a large extent on what has been found best for South African conditions in the constitutions of the older-established colleges, both ancient and modern.

Meanwhile the idea of a College, together with its aims and objects, had been placed before all members

VAN DIE REDAKSIE

DIE KOLLEGE VAN INTERNISTE EN CHIRURGE VAN SUID-AFRIKA

In Oktober 1950 het die Federale Raad van die Mediese Vereniging van Suid-Afrika by sy vergadering in Johannesburg besluit om die aanbeveling van sy Subkomitee i.v.m. Nagraadse Opleiding en Eksamens te aanvaar, nl. 'Dat die Raad aanbeveel dat 'n Kollege van Interniste en Chirurge op die grondslag van 'n nie-winsmakende maatskappy gestig word, om onder andere eksamens vir kwalifiserende diplomas, asook vir hoër diplomas in algemene geneeskunde, af te neem. Die Raad het verder eenparig op die volgende besluit:

'Dat, aangesien die Federale Raad in beginsel die stigting van 'n Kollege van Interniste en Chirurge goedkeur, en aangesien die instelling van so 'n Kollege grootliks sal baat as dit deur 'n liggaam soos die Mediese Vereniging van Suid-Afrika georganiseer sou word, die Federale Raad die instelling van 'n Kollege van Interniste en Chirurge onder sy beskerming sal neem. Die Federale Raad sal 'n Komitee bestaande uit lede en Fellows van erkende Kolleges aanstel om deur en in samewerking met die Hoofkantoor van die Vereniging die aangeleenthede van die Kollege te behartig tot tyd en wyl die Kollege dit onafhanklik kan doen. Verder stem die Federale Raad toe om by die stigting van die Kollege van die organisasie van die Mediese Vereniging van Suid-Afrika gebruik te maak, en om bedrae aan die Kollege te leen totdat laasgenoemde finansiële onafhanklik is.'

Die Federale Raad het by sy daaropvolgende vergadering die personeel van sy 'Subkomitee i.v.m. die Stigting van 'n Kollege van Interniste en Chirurge vir Suid-Afrika' aangestel. Hoewel al die Provinsies van die Unie daarop verteenwoordig was, was die helfte van die Komitee aangestel uit manne woonagtig in Kaapstad; sodoende was hulle in staat gestel om in medewerking met die Vereniging se regsadviseur, mnr. H. Boehmke, die voorgelegde Konstitusie van die Kollege op te stel. Die Konstitusies van Kolleges dwarsdeur die Engelssprekende wêreld was nagegaan, en na maandelange werk is 'n ontwerpkonstitusie opgestel, grootliks gebaseer op wat mees geskik vir Suid-Afrikaanse

of the profession in South Africa, and those who were interested were invited to become Founders of the College.

Early in May 1954 a meeting of Founders was convened in Johannesburg and the draft Constitution was thoroughly discussed. A number of suggestions for the amendment of the draft Constitution were adopted and a Steering Committee was appointed to carry out the suggested changes. Once again the Committee was representative of all the Provinces in the Union, and those who were resident in Cape Town were given the task of consulting with Mr. Boehmke in order to see that the necessary changes were made.

In the meantime, in anticipation of the meeting of Founders, the Federal Council at its meeting late in April 1954 had discharged its Committee with thanks for the considerable service which it had rendered in the drawing up of the draft Constitution. It was felt by the Council that the College should be in a position to manage its own affairs thereafter.

Over a year has passed since that Inaugural Meeting of Founders, and the Steering Committee has carried out the task which was set it at that time. The Constitution has received the approval of the Minister of Economic Affairs and has been registered as a non-profit company. In accordance with the Constitution, the Steering Committee will guide the affairs of the College for the first year of its existence. Time has been allowed for the enrolment of Associate Founders who may wish to play their part in the establishment of the College, and in due course an election will be held for the first elected Council of the College.

The final Constitution provides a formidable list of 'objects of the College'. No useful purpose will be served by mentioning all of these, but the first four could well be quoted. They are:

1. To encourage the study of medicine, surgery and allied arts and sciences; to promote the highest degree of skill and efficiency in their practice; and in and about all the foregoing to cultivate and maintain the highest ethical standards and professional conduct;
2. To promote and encourage and/or to provide facilities for teaching, training and instruction in medicine, surgery and allied arts and sciences, in so far as the Council of the College may from time to time regard such action as being necessary or expedient;
3. To promote and encourage research in medical, surgical and allied sciences;
4. To conduct examinations of candidates for admission to the College and/or such other examinations in the various branches of medicine, surgery and allied arts and sciences as may from time to time be deemed appropriate.

Although the establishment of the College has taken some time, it has been something which has been worth doing well, and the Association can be justly proud of the part which it has played in the establishment of the College. Those who have been the Founders of the College and those who will become Associate Founders have shown that they have at heart the interests of those who will come after them, for the College is being built for the future and not for the Founders themselves.

kondisies geblyk het uit die Konstitusies van gevestigde Kolleges, modern sowel as van ouds.

Intussen is die grondbeginsel van 'n Kollege, sy strewe en doelwitte, aan alle lede van die beroep in Suid-Afrika voorgelê en belangstellendes uit hul gelede is genooi om Stigters van die Kollege te word.

'n Vergadering van Stigters is vroeg in Mei 1954 in Johannesburg belê en die ontwerpkonstitusie is deeglik bespreek. 'n Paar voorstelle vir die wysiging van die ontwerpkonstitusie is aangeneem, en 'n Loodskomitee is aangestel om die voorgename wysigings aan te bring. Weereens was al die Provinsies verteenwoordig, en dit was aan die Kaapstadse lede opgedra om met mr. Boehmke te beraadslaag sodat die nodige wysigings aangebring kon word.

Intussen het die Federale Raad by sy vergadering in eind-April 1954 in Johannesburg sy Komitee met dank vir hul aansienlike diens i.v.m. die opstel van die ontwerpkonstitusie ontbind. Die Raad was van mening dat die Kollege daarna sy eie sake sou kon behartig.

Meer as 'n jaar het reeds sedert daardie inwydings-vergadering van Stigters verloop, en die Loodskomitee het hom goed gekwyd van die taak wat destyds aan hom gestel was. Die Konstitusie het die goedkeuring van die Minister van Ekonomie weggedra en is as niwismakende maatskappy geregistreer.

Volgens die Konstitusie sal die Loodskomitee gedurende die Kollege se eerste jaar sy sake bestuur. Voorsiening is gemaak vir die inskrywing van Medestigters wat graag by die instelling van die Kollege behulpsaam wil wees, en te syner tyd sal die eerste verkose Kollegeeraad verkiesingswys aangestel word.

Die afgeronde Konstitusie bepaal 'n indrukwekkende lys 'doelwitte van die Kollege'. Dit sou doelloos wees om almal hier te vermeld, maar die eerste vier kan gerus aangehaal word. Hulle lees as volg:

1. Om die studie van geneeskunde, chirurgie en verwante kuns en wetenskap aan te moedig; om die hoogste bekwaamheid en bedrewenheid in die praktyk te bevorder; om ten opsigte van voorafgaande die hoogste etiese standaarde en professionele gedrag te bevorder en te handhaaf;
2. Om geleenthede vir die doseer van en opleiding en instruksie in geneeskunde, chirurgie en verwante kuns en wetenskap te bevorder, aan te moedig en/of te voorsien, in soverre die Kollegeeraad sulke stappe van tyd tot tyd wenslik of nodig mag ag;
3. Om navorsing op geneeskundige, chirurgiese en verwante gebiede te bevorder en aan te moedig;
4. Om eksamens van kandidate vir die Kollege af te neem en/of enige ander eksamens af te neem wat van tyd tot tyd in die verskillende afdelings van geneeskunde, chirurgie en verwante kuns en wetenskap wenslik geag mag word.

Die instelling van die Kollege het wel baie tyd geveer maar dit is die moeite werd om so 'n taak goed te doen. Die Vereniging kan met reg trots wees op sy aandeel in die stigting van die Kollege. Die Stigters, en ook hulle wat as Medestigters tot die Kollege sal toetree, dra gewis die belange van hul nakomelinge op die hart; die Kollege word in die lewe geroep, nie vir die Stigters self nie, maar in belang van die toekoms.

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PENICILLIN REACTIONS

The occurrence of many fatal and near-fatal penicillin reactions of anaphylactic nature is a matter of growing concern. A variety of other reactions has been reported such as serum-sickness syndrome, purpura and other skin eruptions, and contact dermatitis. They have been induced by injection and by oral, topical and inhalational administration.

When penicillin, our first antibiotic, was first administered, in doses that would today be regarded as too small, untoward reactions were virtually unknown. But with the use of larger doses, today almost routine, and with sensitized patients receiving further courses of treatment, toxic features are being encountered. The literature on penicillin hypersensitivity is extensive; indeed the drug ranks high among those causing widespread sensitization in man.^{1, 2} A continuous process of sensitization appears to have been developed in a large section of the population with repeated exposure to penicillin, as indicated by the increasing number of reports of serious shock and deaths.^{2, 3} Two cases of sudden death after the intramuscular injection of penicillin preparations are recorded in our columns this week (pages 772 and 780).

The earlier reports described the appearance of urticaria and other features of the serum-sickness syndrome, but dermatological and systemic lesions of greater severity have increased and require serious consideration. Penicillin reactions have been recorded by many observers; in the early years the reactions in many instances were no doubt due to impurities, but as penicillin became purified and separated into different compounds such as penicillin G (benzylpenicillin) and penicillin O (allyl-mercaptomethyl-penicillin), it became apparent that there was a difference in the sensitizing capacity of each. For this reason penicillin O has occasionally been used in patients known to be sensitive to penicillin G, the widely used type of penicillin.

The general impression leans towards the penicillin molecule itself as the determinant in sensitization, since no differences between crystalline penicillin and aqueous procaine penicillin in capacity to sensitize have been satisfactorily determined.² Apparently penicillin combines with serum protein to form an antigen. It has been difficult to establish that penicillin in itself is antigenic to animals. In man the deposition of penicillin in the skin in oil or beeswax has led to the development of large indurated lesions when injections were subsequently given at the previous sites of administration. The oil or wax has been presumed to play a role as adjuvant in the production of such lesions,

and the delayed absorption to enhance antibody formation. Procaine also delays absorption, and with the widespread use of procaine penicillin it is possible that reactions might be due to the procaine alone. In one series of patients,⁴ 1.2% developed reactions to aqueous crystalline penicillin, 2.7% to the crystalline drug in oil or beeswax, and 1.4% to procaine penicillin in oil; when very large doses of aqueous penicillin were used, the percentage of reactions rose to 7.8.

Penicillin anaphylaxis usually comes on within 20 minutes after parenteral administration of the drug; faintness is followed by increased respirations, tightness of the chest, cyanosis, possibly coma, and death. Fatal reactions have followed intramuscular injections, but severe reactions have been reported after instillation of penicillin into the maxillary sinus and into the pleural cavity, and after inhalation therapy; also after oral administration. A history of some other allergic manifestations such as asthma or hay fever has often been noted, and in most of the reported instances, positive skin tests were obtained. In many of the severe reactions the penicillin had been attached to other molecules (iodide, procaine). Severe reactions occur mostly when the drug is re-administered in further courses, rarely after first administration. Skin tests are advisable in individuals with a history of hypersensitivity, especially of asthma or hay fever; the scratch technique is safer than the intradermal and reactions may be read in a few minutes.⁵ Other systemic reactions that have been reported include severe asthma, Loeffler's syndrome, peripheral neuritis, exfoliative dermatitis and purpuric manifestations.⁶

It has become apparent that the use of penicillin (and other antibiotics) for trivial infections and even non-infective conditions should be avoided. It is felt by certain authorities⁷ that after previous immediate reactions, or if there is a history of allergy or a positive skin reaction, or even if penicillin has been administered before, the administration of penicillin can only be justified by urgent indications. If it is given, the equipment for the treatment of reactions should be at hand.

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UNION DEPARTMENT OF HEALTH BULLETIN

Union Department of Health Bulletin. Report for the 7 days ended 28 July 1955.

Plague, Smallpox: Nil.

Typhus Fever, Cape Province. The result of laboratory examination of the two Native cases of typhus fever from the Middledrift district reported in Bulletin No. 29 of 1955, proved negative.

Epidemic Diseases in Other Countries:

Plague: Nil.

Cholera in Calcutta (India); Chalna (Pakistan).

Smallpox in Moulmein, Rangoon (Burma); Phnom-Penh (Cambodia); Ahmedabad, Allahabad, Bombay, Kanpur, Kozhikode, Lucknow, Nagpur, Tellicherry, Visakhapatnam (India); Dacca, Karachi, Lahore (Pakistan); Nhatrang (Viêt-Nam); Mogadiscio (Somali).

Typhus Fever: Nil.

RESUSCITATION OF THE NEWBORN*

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In the past 29 years I have run the gamut of all the changing fashions in labour-room technique for resuscitation of the newborn, from simple violence to ingenious and complicated machinery of more or less Hollywood temperament. The main progress made in that time has been recognition of the fact that sheer sadism, heroic measures, or blatant brutality as exemplified by the vigorous spanking of the unconscious infant, plunging it into very hot or very cold water, or scrubbing its chest with the roughest available towel, have no part in the proceedings. Yet efforts to resuscitate the baby at birth are still often unsuccessful, and it is highly creditable that under such circumstances a feeling of dissatisfaction, if not of gloom, arises in the medical and nursing staffs concerned. It is because I am persuaded that the general understanding of the necessities of the situation could be improved very quickly that I am grateful for the opportunity of addressing this Congress. Yet an experienced obstetrician, Higgins,⁴ has recently stated that there is no evidence at all that resuscitation by any method has ever done any good. He maintains that his Olympian aloofness is justifiable and says '... the important principle is to leave the child alone until it breathes and cries spontaneously. If the brain is undamaged I believe the child will cry in its own time: if the brain is damaged I do not wish the child to live and I doubt whether any care can help it'. He records 1,800 live births under his personal supervision, with 52 deaths—a death rate of almost 29 per 1,000.

You may well ask for my credentials as a self-appointed expert. In 1952, in my last appointment before coming to Cape Town, I was responsible for the welfare of 8,060 live-born babies. In the same period there were 271 stillbirths. Of the live-born 198 died in the neonatal period. Of these deaths 124 were in premature infants, of which there were 750—a premature death rate of 16.5%. Of the 7,310 non-premature infants 74 died—a death rate of 10 per 1,000. The over-all death rate was 24.5 per 1,000 liveborn, with which I was reasonably satisfied. The methods of resuscitation were largely, though not exclusively, those which I am about to present. The resident staff, whose opinion on the current activities of their seniors is worth considering, adopted and practised this routine, and I think the fact that they did so when left almost always to their own devices shows that it enabled them to cope satisfactorily with what is always a very harassing situation.

In the past 15-20 years a great deal of interesting research work has been done on and around the problem of foetal and neonatal respiration, oxygen exchange, CO₂ levels etc. and on the pathological findings in the lungs in stillbirths and neonatal deaths. The importance of intracranial haemorrhages has receded and asphyxia has been generally accepted as the commonest cause of

death in the newborn. This seems to have had the unfortunate result that all postnatal attentions have become focused almost exclusively on the respiratory tract. Recent literature gives only passing mention to intracranial damage and practically none to the circulation. There are minor and relatively infrequent notes of congenital abnormalities which may render independent existence impossible or allow of its continuance for only a short time. All these may cause or contribute to asphyxia at birth and in my submission it is therefore wrong to concentrate on producing pulmonary expansion. Resuscitative measures should be directed to a balanced regime which will attend to all three of the main centres of activity—lungs, heart and brain.

BODY HEAT AND INFECTION

Of almost equal importance is the matter of avoiding doing anything—either by commission or omission—which might have repercussions in the immediate future. Of such items the two most important are the maintenance of body heat and the avoidance of infection.

There are some points in anatomy, physiology and physics which should be remembered and constantly applied. The respiratory movements which occur *in utero* certainly introduce amniotic fluid, and anything it contains, into the bronchial tree but not into the alveoli, which are as yet unexpanded. Two points of importance follow from this: (1) Liquid which has run into the bronchial tree can be removed by suitable positioning of the child, and (2) no sort of intubation can possibly reach it if it is in the smaller bronchi. Further, the tubes used for intubation are not cuffed, and cannot possibly exert much—if any—positive or negative pressure on the bronchial contents beyond their reach, since there is nothing to prevent airflow between the tube and the wall of the trachea. The alleged benefit of intubation is therefore problematical. If the tube can go in, liquid can come out and, should a positive pressure chance to develop, the danger of driving some of the fluid into newly expanded alveoli and choking them seems to me a very real one. If a large enough tube is used intratracheally to prevent loss of positive pressure by leakage around it there will still be no benefit to the unexpanded or poorly expanded lung. The result will be merely over-expansion of already expanded alveoli with production of emphysema or even pneumothorax. Mann,⁶ of Toronto, has devised a simple experiment in physics to demonstrate this effect. In this exercise he shows, by attaching balloons to the two arms of a Y-tube—representing trachea and bronchi—and inflating them to different degrees, that when a more expanded balloon is connected directly to a less inflated one in a closed circuit, the larger balloon expands still further at the expense of the air in the smaller one. This is well known to physicists and is governed by the fact that the internal pressure in such circumstances varies inverse-

* Paper presented at the Obstetrical and Gynaecological Congress, Cape Town, January 1955.

ly with the diameter of the 'bubble'. In a newborn infant, if a mask is used instead of an endotracheal tube, the danger may be even greater, though it may be partly off-set by the fact that the orifice of the larynx is infinitely smaller than that of the oesophagus and any gas introduced into the infant's throat is likely to choose a path of lesser resistance and arrive mostly in the stomach.

Many atelectatic lungs have been tested in negative-pressure chambers and have been shown to be expandable at the normal pressures of 30-40 cm. of water (Wilson and Farber⁹). These pressures have been shown to be within the competence of small premature babies (Smith⁷).

My conclusion is that positive-pressure techniques, whether by the time-hallowed but utterly damnable method of mouth-to-mouth breathing or by any of the mechanical contrivances in current use, are certainly not essential and may be actually harmful.

None of these measures does anything to help the circulation, which is of vital importance, especially that to the brain. Until the lungs expand the foramen ovale remains open and the circulation can continue unimpeded for some time. But, sooner or later, in absence of oxygen, the vital medullary centres and their auxiliaries the aortic and carotid bodies are poisoned by anoxia and accumulation of CO₂ and no amount of work directed towards pulmonary expansion will avail. It is not known at what stage in the process cerebral and other haemorrhages occur but it is possible that they are due not to atelectasis but to anoxia and failure of the circulation, and that if the oxygen supply and venous stasis were attended to, those haemorrhages might not occur. Haemorrhages due to birth trauma, from tentorial tears etc., are not in this category and, by pressure on the medullary centres, make resuscitation improbable in any case. In fact, I suggest that of the triad—respiration, circulation, cerebration—the one which has been receiving most attention is the only one which can be temporarily dispensed with. Put colloquially, we are barking up the wrong tree.

The maintenance of body heat is of great importance. According to Eve,² sympathetic nerve cells are paralysed at 63°F and, since the introduction of induced hypothermia as a surgical procedure, it has been shown that gross cardiac arrhythmias occur when the body temperature falls below 85°F. It is common knowledge that temperatures in the newborn tend to be 'sub-normal', especially in feeble infants, and it is not exceptional for premature babies to be transferred from the labour room to the nursery with rectal temperatures of less than 96°F. Such infants have usually had to be resuscitated and no great stress is usually put on the maintenance of body heat. Yet success may well depend on that.

Many of the infants on whom great pains have been expended—not only maternal—are said to have 'pneumonia'. I am not competent to judge whether or not this is so but, if they have, then presumably the process is infective, and there is no doubt in my mind that the majority of illnesses of the neonatal period are respiratory in origin. These infections must arise, except in rare instances, after the moment of birth and should therefore be borne in mind in all resuscitative procedures. It appals me to see an obstetrician insert a gloved finger,

covered with blood, into a child's mouth 'to remove mucus'. It likewise horrifies me to see the invariability with which the nursing staff ram a mucus extractor into the infant's pharynx, irrespective of need, and suck vigorously thereon, often blowing out quite imaginary or entirely negligible amounts of material before repeating the process several times. Fraser,³ has shown that all sorts of organisms can be recovered from mucus catheters of various types and that a trap of some sort is necessary. He has therefore proposed that when a catheter has been used once it should be discarded and not be blown through and re-used. The organisms, of course, come from the operator and are a menace to the infant.

MEASURES RECOMMENDED

Having now damned most of the accepted procedures it behoves me to suggest some other remedy. In my opinion the essentials of resuscitation are, in order of their application:

- (1) drainage of the airway,
- (2) maintenance of body heat,
- (3) artificial respiration in air, and if these are ineffective
- (4) a supply of oxygen, followed if necessary by
- (5) administration of an appropriate drug.

If these do not produce the desired results I do not think anything will and I am satisfied that I have not omitted any vital requirement and have not resorted to any heroic measures which may produce trouble later on.

My instructions would be as follows. All babies at birth should have the face wiped with a dry swab, be immediately tilted at least 10° down by the head, with neck extended, and left thus until the cord has been attended to. There is no need to use mucus extractors and I would be quite happy to dispense with these entirely. Gravity will remove anything that a mucus extractor will, without the risk of trauma.

The child should then be wrapped loosely in a warm blanket and laid on its side, with neck extended, and be left alone (10° down by the head) for 2-3 minutes. If by then there has been no attempt at respiration, Eve's method of resuscitation² should be started. Even a small nurse can carry out the movements without great effort. No apparatus is needed and the child can be kept wrapped up and warm throughout the proceedings. The basic reasons for advocating this technique are that the abdominal contents are used as a piston to push up and pull down the diaphragm and thus simulate normal respiratory movements; the changes in position of the child assist in maintaining the cerebral circulation; no force of any sort is applied to the child.

If, after 2-3 minutes more, there is no response then oxygen by nasal catheter can be given while Eve's method of artificial respiration is continued. It is now 4-6 minutes since the child was born. If there is no response it is time to try giving oxygen otherwise and I favour gastric oxygen after aspiration of any stomach contents. One litre per minute is quite fast enough and is at least 40 times the child's oxygen requirement (Åkerrén and Fürstenberg¹). At the same time 0.25 mg. of lethidrone can be given into the umbilical vein, if indicated by

the possibility of morphine or pethidine drowsiness (Wilson⁶); or $\frac{1}{4}$ c.c. of coramine or lobeline if sedative drugs were not used prior to delivery. I have seen no benefit from the use of eucortone.

If the baby then breathes it should be put in a cot, oxygen-box, or incubator, and be kept 10° down by the head for 6-12 hours and be turned from one side to the other every half-hour. Care should be taken that the oxygen saturation of the baby's atmosphere does not exceed 40% since the danger of development of retrolental fibroplasia is apparently associated with high oxygen tensions (Jefferson⁵). The child should be kept warm but should be left naked, because it will be more active than if it is dressed. The more the muscular activity the better the circulation and the better the breathing. Even in a private dwelling a cradle of some kind can be arranged over the naked child, with blankets and hot-water bags overlying, so that movements are unrestricted. No binder is required for any baby and nothing of that kind should be allowed on these feeble infants.

PRESENT-DAY TREATMENT OF HYPERTENSION IN GENERAL PRACTICE

JOSEPH B. HERMAN, B.Sc., M.B., CH.B. (CAPE TOWN)

Cape Town

Heart disease, cerebro-vascular disturbances and renal insufficiency due to hypertension are commonly encountered in general practice. Only those cases of hypertension showing symptoms and signs of developing these complications, i.e. *hypertensive disease* as opposed to asymptomatic essential hypertension, are discussed in this article.

Ideally in the treatment of hypertension, a method should be chosen which, firstly is acceptable to the patient, enabling him to carry on with his normal daily routine and, secondly, can be effectively controlled by the doctor, preferably the family practitioner.

Until a few years ago, severe hypertension was treated either by surgery (a formidable undertaking), or, except for thiocyanates, merely by placebos. Treatment by thiocyanates was one of the first chemical methods used. Results were unpredictable and control difficult. With the recent evolution of hypotensive drugs, however, powerful agents towards the relief of symptoms and stemming the progress of complications have become available. We are possibly only on the threshold of even greater advances in the treatment of hypertension.

Smirk has contributed much towards putting the drug treatment of hypertension on a more satisfactory basis. In a recent paper Smirk *et al.*¹ describe their experience with a combination of Serpasil and the autonomic-ganglion-blocking agent pentapyrrolidinium bitartrate (Ansolsen). This treatment seems to hold the most promise for satisfactory control of hypertension in general practice, at the present moment.

Dramatic improvement can be achieved by using ganglion-blocking agents and other anti-hypertensive drugs. Their chemistry, pharmacology and experi-

Finally, I readily admit that there is always doubt whether any resuscitative procedure has in fact produced the results attributed to it. But with this routine one can feel confident that, even though the baby may have breathed *post hoc* and not *propter hoc*, no part of the procedure can be other than beneficial to the infant's prospects of normality thereafter.

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mental effects have been extensively reviewed in the literature. There are several reports on the successful control of hypertension by medical methods in hospitals; but reports by general practitioners are still wanting.

It is the purpose of this article to report my experience in general practice with various anti-hypertensive drugs used in the treatment of hypertension. The patients discussed are those with symptoms of developing or established complications of hypertension, e.g. paroxysmal nocturnal dyspnoea, cardiac enlargement, retinitis, and encephalopathic attacks.

CASE REPORTS

Case 1.

A European male, aged about 70 years, presented as a case of hypertensive cardiac failure. There were frequent attacks of paroxysmal nocturnal dyspnoea, angina decubitus and a gallop rhythm. An ECG showed left bundle-branch block. A physician reported on 5 January 1951: 'Hypertensive and coronary heart disease with angina pectoris and episodes of left heart failure. Blood pressure +260/120 mm. Hg.' In spite of mersalyl and digitalis the patient was practically bedridden in November 1952.

In that month he was started on protoveratrine in an effort to reduce the blood pressure. It was possible to observe him frequently during the day for the first 2-3 months of treatment, and the dosage varied (up to 2 mg. per day in divided doses) according to the blood pressure recorded.

An improvement was noted in exercise tolerance (after 1 month on protoveratrine the patient was able to walk a mile). There was a reduction in the number and the severity of the attacks of paroxysmal dyspnoea, and attacks of angina were less frequent. It is worth noting that there was a marked improvement in symptoms in spite of the fact that the blood pressure was not considerably reduced and that for much of the day the readings were actually hypertensive. Bradycardia was present; e.g. with a blood pressure of 150/90 mm. Hg the pulse rate was 56 per minute.

Two attacks of paroxysmal nocturnal dyspnoea occurred in the first week after beginning treatment with protoveratrine. Although

mersalyl was stopped after the first week, the patient remained free of attacks of cardiac asthma until 6 January 1953, when this condition appeared under emotional stress. In spite of what was considered adequate protoveratrine dosage the blood pressure rose to 250/145 in the afternoon. This was followed by dyspnoea with wheezing, pain in the right arm and a small haemoptysis, which was controlled with morphine, $\frac{1}{2}$ gr., and atropine.

The patient continued on protoveratrine after his return to his home in Port Elizabeth, and was able to carry on with his work. A few attacks of paroxysmal dyspnoea coincided usually with times when the drug was omitted. He remained reasonably fit until his death about 20 months after commencing treatment.

This case is reported at some length, because of the unique opportunity of making frequent observations during the day in a patient living under home conditions. It is worth stating again that noteworthy improvement was observed even when there was no considerable reduction in blood pressure. It seemed that a reduction of blood pressure towards normal and for part of the day was sufficient to benefit this patient. The bradycardic effect of the drug may have contributed to his well-being. It is also worth noting the part emotion played in causing a rise in the blood pressure and producing paroxysmal dyspnoea even while the patient was receiving the drug.

Case 2

A European male, aged 50 years. This is a case of hypertensive cardiac failure with cardiac enlargement. As part of a routine examination in November 1951, this patient was found to have cardiac hypertrophy, his apex beat being $4\frac{1}{2}$ inches from the mid-sternal line; his blood pressure was 180/110 mm. Hg. There were no symptoms referable to the cardiovascular system. A physician on 1 January 1952 reported: 'The ECG showed an old anterior infarction despite the negative history. On screening there was marked left ventricular enlargement but no aneurysm'.

On 30 June 1954 the patient developed nocturnal cardiac dyspnoea. He was started on anti-hypertensive treatment—Rauwiloid (4 mg. nocte) and Ansolsen (gradually increased to 40 mg. t.d.s. a.c.). The morning dose was not well tolerated and often he had to omit this dose because of symptoms of hypotension. He had frequent spells of feeling faint. When I saw him in such an attack at his home, there was a well-marked hypotension. Apart from attacks of hypotension, he has remained free of any signs of congestive cardiac failure for 12 months now and has been able to carry on with his daily work as a sales representative. Hypotension could be immediately relieved by assuming the horizontal position.

Interestingly enough, at a time when the patient was having hypotensive attacks whilst at work, blood pressure readings at the hospital continued to be hypertensive. It would seem that treatment is bound to fail if this factor of lability, with a tendency to hypertension, when the patient is subjected to the stress of waiting at the hospital out-patient department among sick patients and anxiously awaiting the doctor's verdict, is ignored. It is during the initial stages of out-patient control that the family doctor could be most helpful, reassuring the patient and instructing him how to avoid attacks of hypotension; otherwise treatment may be prematurely abandoned.

Blood-pressure readings at my consulting rooms have been very satisfactory—usually 140/80 sitting. To illustrate how the pressure may fluctuate, the following readings taken when this patient came to see me during an attack of 'giddiness' are cited as a typical example of blood pressure fluctuations.

20 January 1955. 4 p.m. 90/50 (sitting). 4.5 p.m. 160/80 (lying recumbent; symptoms dispelled). 4.10 p.m. 110/60 (sitting). 4.20 p.m. 150/80 (recumbent). 4.25 p.m. 120/70 (sitting).

Readings at the hospital a day or two later: 220/130 (on lying) and 140/110 (on standing).

It is easy to see how deceiving casual readings can be in the control of hypertension.

Case 3

A European male, aged about 54, consulted an eye specialist for a defect of vision. The eye specialist referred him to a physician because of the finding of hemianopia with signs of severe hypertensive vascular changes in the fundi. He was known to have had long-standing hypertension with fairly rapid progression. Diagnosis: cerebro-vascular spasm producing hemianopia.

Within a few weeks of commencing treatment with Ansolsen

(40 mg. t.d.s. a.c.) and Serpasil (0.1 mg. t.d.s. p.c.), there was a rapid improvement of vision to normal and a further improvement in the picture in the fundi. The patient continues to be well—better than he has felt for years.

Case 4

A European female, aged 52 years, whose chief complaint was severe headaches particularly at night necessitating the taking of an average of 8 headache tablets during the night. She was a case of hypertension of many years standing. When seen in November 1952 there was doubtful left-sided papilloedema. Diastolic pressure was 140 mm. No other organic abnormality was found to explain the headaches, and it was felt that anxiety probably played a considerable part in their production.

The response to anti-hypertensive drugs (Ansolsen and Serpasil) was not considerable in her case; the headaches were dispelled during the day, but they continued at night, although the patient volunteered improvement. She appeared to be far more composed than was usual before treatment—probably an effect of the Serpasil—and she felt more reassured, anticipating further improvement.

From this case, contrary to what some physicians have feared, viz. that a neurosis might be produced by frequent blood-pressure readings in the patient with hypertension and anxiety, it would seem that treatment properly applied may have a reassuring and calming effect on the patient.

A marked difference between sitting and recumbent blood-pressure was noted, and it is possible that the increase in blood pressure with recumbency at night was responsible for the nocturnal headaches.

Case 5

A European male aged 65 years, who had suffered a coronary thrombosis in 1949, was seen in 1953 with hypertension and a threatened cerebro-vascular incident. The blood pressure was 225/125 mm. Hg, and the ECG showed left ventricular hypertrophy. Albuminuria was present and the urine had a fixed specific gravity of 1012. The blood urea was 66 mg. %.

In October 1954 an eye specialist referred this patient to a physician because of retinal hypertensive vascular disease with fundal haemorrhages. X-ray examination confirmed the left ventricular hypertrophy. The physician requested me to start anti-hypertensive treatment. The haemorrhages in the fundi cleared within a few weeks under treatment with Ansolsen and Serpasil. The urinary findings remain unchanged.

Case 6

A European male aged 43 years, when reporting for periodical examinations following an attack of coronary thrombosis 4½ years ago, always complained of vague precordial symptoms. There was a constant tachycardia and the blood pressure was consistently raised. He was considered to suffer from a mild anxiety state.

Of great interest in this case is the extreme sensitivity to Rauwiloid tablets. Two of these (=4 mg.) at night were prescribed in October 1954. About one month later I was called out at night by relatives after the patient had collapsed while visiting some friends. An ECG done after this episode showed no change when compared with one done about a week previously. It was felt that the attack might have been due to hypotension produced by the Rauwiloid tablets. The dose was reduced to one tablet at night.

Since he has been taking one tablet, the patient has felt very well—"feeling more confident in myself". His pulse rate now is normal (70 per minute), and blood-pressure readings average 115/70 mm. Hg (sitting) and 130/80 (lying). I feel quite certain that in this case the subjective improvement, the bradycardic effect, and the lowering of blood pressure, are due to the treatment with one Rauwiloid tablet at night. He had been seen over a period of about 5 years at monthly intervals, and digitalis, phenobarbitone with aminophylline, coronary vasodilators and other drugs had failed to achieve these results. The influence of suggestion can therefore also be rejected.

Case 7

A European male aged 48 years. This is another case in which angina pectoris was associated with hypertension following a previous coronary thrombosis. There was always an associated

tachycardia. A slower pulse rate, a lowering of blood pressure, and an improvement of the angina pectoris followed therapy with Rauwiloid plus Ansolsen. He became, however, more aware of intermittent claudication in the left leg, which may have been an indirect result of the improvement in exercise tolerance.

DISCUSSION

Where severe hypertension is a symptom of a removable cause, treatment may cure the hypertension.³ Rosenheim defines 4 groups from the numerous cases of patients presenting with severe hypertension, in which treatment may possibly lead to a cure. These are unilateral renal disease, pheochromocytoma, Cushing's syndrome, and coarctation of the aorta. The vast majority of cases of hypertension, however, still belong to the group known as 'essential hypertension' in which there is no discoverable cause. At present there is no specific treatment for this type of case. One cannot speak of a 'cure' of the hypertension, since at present most cases have to receive continuous treatment, in the same way as diabetics have to receive daily insulin injections.

In the cases discussed in this paper I have recorded the effects of certain hypotensive drugs, namely a derivative of *Veratrum album* (protoveratrine), preparations containing alkaloids of *Rauwolfia serpentina* group (Serpasil and Rauwiloid), and the autonomic-ganglion-blocking agent Ansolsen (pentapyrrolidinium bitartrate).

Serpasil and Rauwiloid are particularly useful for their calming effect on the patient and also for their mild anti-hypertensive effect. Combined with the more potent Ansolsen, the effect of each drug in lowering the blood pressure is enhanced—a smaller dosage of each drug is thereby required and the undesirable side-effects are correspondingly fewer and less severe. This is of particular importance in the use of Ansolsen. Reports in current literature emphasize that Ansolsen should be used only in conjunction with one or other of these hypotensive agents.

Protoveratrine was very efficacious in the case of hypertensive cardiac failure in which it was used. Possibly its bradycardic effect enhances its value.

In cases of hypertensive cardiac failure, it is probable that mercurials and digitalis may be dispensed with, once the patient is controlled by the anti-hypertensive drugs.

It seems that the anxious patient who has recovered from a previous coronary thrombosis and in whom the doctor always finds constant tachycardia and a raised blood-pressure (possibly associated with a mild angina) is the ideal case to treat with the mild hypotensive drugs Rauwiloid and Serpasil. This is contrary to the previously-held concept that it was unwise to lower

the blood pressure in patients with angina pectoris. The same considerations apply to the treatment of threatened cerebro-vascular accidents.

All the cases recorded in this article reported considerable improvement in their symptoms. Case 2 is the only patient in whom severe hypotensive episodes occurred at the start; he has been able to continue with his work throughout.

The advantages of this form of treatment are:

1. There are no complicated chemical tests required for control.

2. No injections are necessary.

3. A simple dosage schedule (dependent on a thorough understanding of the action of the drugs) and a sympathetic approach are basic to the treatment.

It has been my object to show that the drugs can be very effectively used in general practice; but one has to take certain precautions. We are dealing with drugs which have far-reaching effects. Gradual increase in dosage and frequent blood-pressure readings are required at the commencement of treatment.

Explanation and reassurance will achieve the necessary cooperation in a patient who has had hypotensive attacks—otherwise treatment may be prematurely stopped by the patient who becomes alarmed by the side-effects of the drug. Cooperation was readily achieved in all these cases once they became aware of improvement in their symptoms.

Isolated hypertensive readings during the course of treatment should not be considered an indication of failure of treatment, nor do they necessarily indicate that an increased dosage is needed. This is very evident in case 2, in which an injudicious increase in dosage might have had disastrous effects.

Improvement in symptoms is a useful yardstick in assessing the effects of treatment, and provided there is no urgency *festina lente* should be the motto when considering increments in dosage.

In conclusion I should like to stress the importance of control of the hypertensive patient in his home environment, where he remains ambulant and able to carry out his normal routine, and where a truer reflection of his blood pressure fluctuations may be obtained.

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PSYCHOTHERAPY : THE THERAPEUTIC FACTOR AND EFFECTS

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While it is an undoubted fact that psychotherapy may produce a change in the personality of the patient for the better, the exact nature of the therapeutic factor may not always be obvious. The difficulty has arisen out of the existence of innumerable conceptions and meanings implied within the definition of psychotherapy. It is thus quite conceivable that a therapeutic process which is common to many techniques and approaches may evade precise definition.

Whitehorn¹ defined the therapeutic task of the doctor as one in which the physician serves as 'the person through whom the patient can come to a peaceful, tolerant, tolerable, and gratifying *modus vivendi* with other persons'. Levine² defines psychotherapy as the 'provision by the physician of new life experiences which can influence the patient in the direction of health'. Sandor Rado³ conceived psychotherapy as a process whereby human influence is employed for the treatment of behaviour disorders. Others have defined psychotherapy as any therapeutic procedure that leads to the acquisition of insight by the patient. Masserman,⁴ adopting a more holistic approach, defines psychotherapy as 'any procedure available to the ethical practitioner that helps the patient become happier, more creative, and better adjusted in his familial and social milieu'. He suggests that it is a fallacy to regard psychotherapy as a process in which misconceptions are dissipated and putative truisms are inculcated into the mind of the patient, but rather it is the re-establishment of certain delusions that are vital to the existence of mankind. It seems to Masserman that there are 3 necessary delusions for the allaying of anxiety in man: (1) The delusion of invulnerability and immortality of man which leads the individual to believe that he is inviolate and that nothing can harm him. (2) The delusion of the omnipotent servant, in which man finds comfort in his religious practices and security and personal deities, whatever form the latter may take. (3) The delusion of man's kindness to man and that in time of need 'one can seek and actually obtain succour from one's fellow man . . . someone must and will care for me as once my mother did, else there is no goodwill toward men and therefore no peace on earth for me'.⁴ Masserman concludes that to tamper with these delusions which have become so deeply ingrained in mankind that they are sacred to him would not only endanger the patient, but imperil the therapist as well. Frieda Fromm-Reichman⁵ defined psychotherapy as an attempt to effect the 'mitigation of a person's emotional difficulties in living and to bring about recovery from his mental symptoms'.

The similar claims of success by the various schools of psychotherapy has aroused a good deal of speculation as to what is the essential factor underlying the various psychotherapeutic techniques. The fact that simple reassurance or placebos have resulted in an improve-

ment in no way invalidates the presence of a therapeutic factor, even though both the therapist and the patient may have no knowledge of the dynamics concerned.

THE GOAL IN PSYCHOTHERAPY

Ideally the therapeutic goal in psychotherapy is to enable a patient to achieve some sort of maturation that will effect a self-realization whereby he can employ his various skills and drives with satisfaction and freedom from anxiety, within the harmonious realm comprising the established mores of his cultural environment. The patient, however, should not be guided by the ethical goals of the psychiatrist and it is not intended that the values of the latter should become the personal assets of the patient. The danger of the therapist's influence in this respect is a real one; a patient may come to be emotionally dependent upon the therapist during the course of protracted therapy. Frieda Fromm-Reichman writes: 'It would be easy to feel flattered by the patient's trust and dependence rather than to remain alert to the fact that their insecurity, hence over-dependence, is part of the disturbance for which they seek treatment'. It must not be forgotten that while the therapist is concentrating upon the utterances of his patient, so likewise is the latter evaluating and assessing the inadvertent emanations that may spring from the therapist's own communications during the course of treatment.

Whatever the therapeutic goal, psychotherapy involves the interaction of the personalities of the patient and therapist. The psychodynamics of the latter has often been sadly neglected. One is perhaps tempted here to define psychotherapy as a relationship initiated between two strangers whereby one more mature and secure attempts to impart a feeling of security to another at a lower level of emotional maturity. It may rightly be concluded that not only must the therapist possess a knowledge of psychodynamics, but that he himself, either through the medium of a personal analysis or through ordinary life experiences, must have achieved some level of emotional maturity. 'It is a wise therapist with any technique that knows who is gaining most unconscious satisfaction from the treatment, especially when the latter becomes unnecessarily dramatic, lucrative or prolonged'.⁴ The mature therapist should be able to pursue objectives not referable to himself, to view his abilities and weaknesses realistically, and possess a sense of humour and a unifying philosophy of life which is more or less in harmony with his milieu. Marcel Proust, in his *A la Recherche du Temps perdu* shrewdly perceived some of the attributes required by a physician: 'People like you must have suitable doctors, I would almost go so far to say treatment and medicines specially adapted to themselves. . . . Nine-tenths of the ills from which intelligent people suffer spring from

their intellect. They need at least a doctor who understands their disease. How do you expect that Cottard should be able to treat you; he has made allowances for the difficulty of digesting sauces, for gastric trouble, but he has made no allowance for the effect of reading Shakespeare'.

While it may be true to say that psychotherapy has undergone a process in which the patient has risen from the status of a diseased organism to a dynamic individual, the progress of the physician has not developed *pari passu*. Though psychotherapy may be practised with humility, a patient may be led to perceive the therapist as one suffering from a 'Jehovah-complex'. Unknown to the therapist, his desk may present a barrier between the patient and himself. This effect was well demonstrated by White,⁶ who observed the manner in which 166 patients seated themselves after they had entered the consulting room. He was able to demonstrate that a significantly higher percentage of patients sat down at ease when the interviewing physician did not sit behind the desk than when he did.

Insight

One of the first tasks of the therapist lies in an attempt to give the patient a better understanding of his symptoms and how they may be connected with or controlled by unconscious activities. Not infrequently, when an unconscious motive is brought into consciousness, its pathological potency disappears. Masserman¹ somewhat cynically regards insight as that 'mutually happy state in which the patient professes acceptance of the current formulations of his therapist'. He further suggests that insight may at times be harmful and represent a 'narcissistic projection' of the therapist's own intellectual brilliance, which instead of guiding the patient serves merely to confuse and mislead him. A patient may, therefore, find himself in a 'status schnorkelis' submerged in 'oceanic depths' of insight, having little contact with reality. I can recall one occasion when I was obliged to give a patient intensive psychotherapy before his departure to his farm several hundred miles away. It was hoped to give him some measure of insight within the time available. Shortly before his discharge, in an attempt to evaluate what progress had been made, I asked him whether he was able to perceive the connections between his symptoms and underlying emotional problems. Much to my distress he replied rather naively, 'The doctor says I loves my mother'.

Before embarking on the central theme of this paper, namely the therapeutic factor, one would like to suggest that one of the main therapeutic tasks is to guide the patient and dispel his fear of the outside world so that he may once again feel it possible to re-establish his trust in the family and in other members of his society. Once this is accomplished, he may be ready to pursue a variety of autonomous interests and risk the unknown.

THE THERAPEUTIC FACTOR IN PSYCHOTHERAPY

The main therapeutic factor common to all techniques lies in the development of a personal relationship between patient and therapist. The majority of emotional

disturbances that occur in the maladjusted individual can be traced back to earlier disturbances in the primary life experiences associated with the maternal figure. Much of the infant's future personality depends upon the quality and character of his emotional attachment to the mother effected through the medium of sensory experience. Margaret Ribble⁷ has emphasized the importance of 3 types of sensory experience, viz. tactile, kinaesthetic and auditory, which are necessary for the establishment of this primary relationship. John Bowlby⁸ has pointed out that unless such a relationship is established and maintained during the 1st year of life, then the infant is likely to develop behaviour disturbances in later childhood. It appears that these children are incapable of forming good relationships with others. They appear to lack the capacity to care for people, they are inaccessible to those who try to help them, and they show a poor emotional response to situations where such response is normal. In cases of severe maternal deprivation, the tendency towards delinquency in later years is very strong.

It will be seen, therefore, that the therapeutic factor is primarily associated with an object-relationship of a parental nature. This personal relationship was first perceived by Freud, who coined the term 'transference' as meaning the transfer of a primary object-cathexis onto the therapist. Freud supposed that the patient transfers his repressed and forbidden infantile reactions towards parents onto the therapist. According to Guntrip⁹ the patient has genuine realistic needs towards the therapist, and the efficacy of psychotherapy may depend upon the satisfaction of those needs. If the therapist assumes the role of a cold objective scientist, minutely scrutinizing the patient but not participating in this relationship, he will revive the anxiety and frustration that were present in the earlier parental relationships of the patient. Guntrip sees the therapeutic process as a 2-stage development. During the 1st stage the patient will express the desire and need for a state of dependency which is akin to the parent-child relationship. It is a need for support, protection and reassurance. The successful therapeutic goal is achieved in the 2nd stage, when the patient gives up his erotic wishes towards his parents and, with the support of the therapist in the form of acceptance and approval, will move towards a state of independence. It is erroneously believed that the technique of psychotherapy itself is solely responsible for the improvement in the patient's well-being.

It should be borne in mind that the various techniques merely uncover the unconscious motivations of the patient, which may very often leave him worse off than at the commencement of therapy. There is the delusion that psychotherapy is a 'common-sense' procedure and that the therapist merely has to 'hang on' until the patient somehow or other develops an insight into the emotional problems. The real therapeutic factor, however, lies in the continuation of the relationship between the patient and therapist, and enables the patient to deal with his unconscious strivings. The inability to maintain this relationship, whether it be through circumstances or lack of skill on the part of the therapist, may result in the subjection of a patient

to a multiplicity of therapists, as not infrequently occurs in some clinics.¹⁰ It is an admission of failure in the understanding of the transference situation; such therapy can best be described as 'chit-chat', 'elastoplast' or 'safety-pin' therapy. Guntrip⁹ has summarized the therapeutic relationship most concisely in his definition of psychotherapy 'as a cooperative effort of two people in the dynamic personal relationship of the analytical situation to solve the problems of one of them'. He enumerated 3 basic obstacles to successful psychotherapy, which I feel is of importance to mention here:

1. Physical pain may present a barrier, especially when it results from a psychosomatic disturbance and is a substitute for severer mental pain. A patient is unable to give up an illness unless he can be certain that something better can take its place (this is particularly true of the conversion hysterics).

2. The second fundamental factor is the introjection as libidinal cathexis of bad object-relationships which may be so deeply ingrained that the patient is unable to part with them. For such a patient, bad parental relationships are better than none at all, and it may take a patient a very long time to feel that the therapist is a better object-relationship or parent substitute.

3. Finally, there are some individuals who are capable of entering into a good relationship with others because of stronger and deeper attachments to internalized bad parental objects. They appear to be incapable of trusting external object-relationships. Very often they retreat into a kind of detachment cloaked with intellectual interests and even pseudo-cooperative attitudes.

THE EFFECTS OF PSYCHOTHERAPY

The beneficial effects of psychotherapy has long been a controversial problem and has led many sceptics to question the efficacy of psychotherapy. Thus Eysenck¹¹ writes: 'Spontaneous recovery from neurotic disorders is observed quite frequently. Any mental hospital with a long waiting list finds that neurotics who have been asked to wait 6 months or more for treatment will write at the end of that time that they do not need treatment any longer as they have recovered sufficiently without it'. One feels that these remarks may lead one to the inevitable conclusion that spontaneous recovery is the rule. It should be borne in mind that the patient's own self-evaluation is not always a reliable proof of his recovery. The majority of neurotic patients may have little or no insight into their problems and, while they may be able to say that their symptoms have disappeared, one is in no way certain that these have not been replaced by more subtle expressions of their underlying conflicts. It has been my personal experience that many a patient seen in the out-patient department will profess to be well in order to avoid hospitalization. While it may be true that many a patient may appear to have recovered from a neurosis without the intervention of a therapist, this does not preclude the effect of certain other therapeutic factors not readily perceived by the patient or therapist. Therapeutic influences are inevitable and may function imperceptibly;

They may be effected through changes in environment, a casual reassurance from a person important to the patient or religious influences. Indeed, certain neurotic individuals who are resistant to therapy may upon reading Eysenck's article derive great therapeutic satisfaction from the knowledge that a scientist of status shares their own personal inner convictions.

Eysenck in the same article suggests that a controlled series of neurotics receiving no therapy should be allowed to serve as a base line against which to compare the recovery rates of those receiving analytical or eclectic therapy. Unfortunately, it is not possible to match neuroses accurately for the purpose of forming a control and experimental series, since patients cannot be subjected to an experimental environment capable of eliminating every unpredictable therapeutic factor unless they are confined to a vacuum. However, the most serious omission in Eysenck's evaluation of psychotherapy lies in the failure to consider the nature of the relationship between patient and therapist. It is not a constant and cannot be measured quantitatively. While we can measure the eye-wink reflex in response to a stimulus, we have no means of measuring the twinkle in the eye, which is what Eysenck by analogy would have done in the evaluation of a therapeutic factor. Even if psychotherapy is a delusion, it is still a very necessary one. 'To cure sometimes, to relieve often and console always' is a sufficiently high goal for anyone to pursue.

SUMMARY

Various definitions of psychotherapy are presented and the goal in psychotherapy is defined. The emotional relationship between patient and therapist is emphasized as one of the main therapeutic factors in psychotherapy, irrespective of the technique employed. Difficulties in assessing the therapeutic factor are discussed and criticized.

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FATAL PENICILLIN REACTION

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Reports of death following the parenteral use of penicillin preparations are increasing without the necessary appreciation of their significance. Serious reactions may occur, and enquiry must always be made as to previous injection or sensitivity. What is often not realized is that in penicillin we have a potentially lethal weapon which may kill without any warning. Recent work has shown that an allergic state does not necessarily have to exist to precipitate a 'reaction' and that a history of previous asymptomatic penicillin therapy, parenteral or otherwise, does not exclude the possibility that a 'reaction' may ensue.

The following case is described as a typical fatal case of anaphylaxis following the parenteral use of penicillin. Although there may be some conjecture concerning the actual mechanism of death, especially in the light of the autopsy findings, the weight of evidence must favour a penicillin 'reaction'.

CASE RECORD

A European female aged 36 years consulted her doctor with urinary symptoms. She was afebrile and urine analysis was negative. Disregarding his advice she insisted that she be given an injection of penicillin because this had previously been effective in a similar urinary condition. The injection was administered in the form of 400,000 units of procaine penicillin in sesame oil with aluminium monostearate into the upper and outer quadrant of the left buttock. Within about 2 minutes of receiving the injection the patient complained of nausea followed by vomiting. There was an urgent desire to pass urine and whilst engaged in this she collapsed, with signs of peripheral circulatory failure. Resuscitative measures failed and she died about 8-10 minutes after receiving the injection.

Autopsy. An autopsy was held about 4 hours later. The deceased was of good build, 5 feet 9 inches in height and of an estimated weight of 150 lb. The external appearance of the body was normal except for oedema of the ankles.

Cardio-vascular system. There were scattered areas of healed pericarditis. The ventricles and papillary muscles were markedly hypertrophied, with fatty changes in the myocardium. No mural thrombi were noted. The mitral valve, incompetent and thickened, presented small pin-head nodules resembling rheumatic nodules. Scattered atheromatous plaques but no thrombi were present in the coronary vessels. Histological examination confirmed the hypertrophy and revealed scattered areas of myocardial fibrosis resembling Aschoff bodies. The small myocardial vessels showed some medial thickening. Atheroma of the aorta was marked.

Kidney. No scarring was noted but medial hyaline changes of the arterioles was present.

Liver. This was markedly enlarged, especially the right lobe, and demonstrated congestive changes.

Spleen. This was reactive, with some necrosis of the germinal centres.

Brain. The vessels were congested, with atheromatous plaques in the circle of Willis.

Bladder. There were scattered areas of calcification suggestive of bilharziasis but no ova were seen.

The remainder of the organs appeared normal.

Buttock. On incising the injection site a pool of penicillin was noted in apposition to a small extravasation of blood apparently caused by trauma to a small blood vessel.

Past History. Subsequent information obtained from the relatives was invaluable in the final assessment. Penicillin injections had been administered previously to the deceased. Repeated attacks of sore throat had always responded dramatically to this form of treatment. Symptoms of congestive cardiac failure had been present for at least a year without arousing suspicion. The deceased had been advised 3 years before her death to consult a cardiologist in view of a raised diastolic blood pressure and tachycardia. In 1953 she developed a simple urticaria following a prophylactic injection of diphtheria antitoxin.

CONCLUSIONS

The manner of death in this case is in accordance with a penicillin 'reaction' and the history of previous penicillin treatment makes this more likely. However, definite pathological changes were present in the organs and whether they are to be considered as contributory factors or as a completely separate entity is a matter of conjecture. In the heart, rheumatic changes were present, and also hypertensive changes; and therefore the theory must be considered of a sympathetic response precipitated by the sharp stimulus of injection and causing a fatal fibrillary reaction in a myocardium and conducting bundles already scarred.

Intravenous injection of procaine penicillin has been demonstrated in animals to cause symptoms and results similar to this case. Trauma to a blood vessel was noted in the case here reported, albeit a very small vein, and the possibility of inadvertent intravenous injection and rapid absorption of this material must therefore be considered. Such accidental venipuncture should be checked by withdrawing the plunger before actual injection.

I wish to thank Dr. R. Nagle of the Union Health Department, Durban, who helped and encouraged me to write this article.

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[Another sudden death following an injection of procaine penicillin is recorded in Dr. J. G. Botha's letter, on page 780 of this issue.—*Editor*.]

SOUTH AFRICAN MEDICAL CONGRESS, PRETORIA, 17-22 OCTOBER 1955

Members who propose to attend Congress and have not booked their accommodation are running the risk of disappointment. Owing to the centenary celebrations and other events being held in Pretoria at about the same time, there will be a run on the

hotels. The S.A.R. & H. Tourist Bureau is still holding accommodation available for doctors attending Congress (and this can only be obtained through the Bureau) but will shortly be throwing all reservations open to the general public.

ASSOCIATION NEWS : VERENIGINGSNUUS

SCIENTIFIC SAFARI—THE CIRCULATION OF THE GIRAFFE*

R. H. GOETZ, M.B., CH.B. (CAPE TOWN), M.D. (BERNE), M.D. (FRANKFURT A/MAIN)

and

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Department of Surgical Research and Department of Physiology, University of Cape Town

It was with some hesitation that we accepted the invitation of your Branch to present this report of our recent expedition to the Lowveld of the North-Eastern Transvaal, where we studied the circulatory system in the giraffe, for it was only a preliminary investigation and the real work has still to be done.

Many of you will say, 'Why the giraffe?' The answer is that for many years the giraffe has intrigued scientists all over the world by the physiological implications associated with its long neck.

My interest in this problem goes back to the time when we were interested in the carotid sinus in its relation to hypertension. It had been shown that hypertension could be produced experimentally by cutting the depressor nerves and there was much speculation on how this operation in the giraffe would affect its blood pressure. However, this work on the carotid sinus was quickly superseded by the researches of Goldblatt, who in 1934 showed that clamping of the renal artery produced hypertension. It appeared that the solution of the hypertension problem was near, but although this and subsequent work has furnished the explanation for some cases of hypertension, it has not produced the clue to the origin of essential hypertension. Indeed, within recent years the carotid sinus and the depressor nerves have enjoyed a scientific comeback, and it may well be that they will yet be found to play a more important role in the cause of high blood pressure than the Goldblatt clamp.

When, in 1949, I seriously discussed the giraffe experiment with Professor de Burgh Daly at Cambridge, he offered his laboratories, but stipulated, 'You must bring your own giraffe'. However, these animals could only be procured at a cost of £200 each, f.o.b. Mombasa, to which had to be added the cost of transport to London. Since we required at least 3 animals for the preliminary investigations alone, financial considerations put the undertaking out of our reach.

By this time certain new techniques bearing on this problem had been developed. Cardiac catheterization of the human heart, which had become a routine procedure, had enabled us to reach any part of the venous or arterial systems by means of a catheter, in order to take pressures and blood samples. In addition, modern electrical recording equipment had been developed which made it possible, in short, to take the laboratory to the animal instead of the reverse. This latter development had obvious advantages—it overcame the difficulty of transport, feeding and taming, and one could undertake the investigations in isolation from a curious public. Against this one had to weigh the difficulty of handling the animal in the veld, instead of at one's leisure in the laboratory.

By 1949 also it was felt that investigation of the cerebral circulation in the giraffe might reveal information useful in unravelling the problem of blackouts and fainting in crews of high-speed aircraft. Farnborough was interested, and on our return from the expedition, when news of it had reached the American press, we were told that an investigator from the United States Department of Aviation Research had gone to Kenya to report upon the possibility of doing exactly the same type of work as we had in mind, and had returned home impressed with the difficulties he had found. The U.S. Department therefore dropped the project but, I hope, only for the time being.

THE PROJECT

Some time later I learnt that the rapid development of the North-Eastern Transvaal as a food-growing area necessitated the ex-

termination of large numbers of giraffe, who had multiplied greatly in recent years and had become a menace to organized farming. The Director for the Conservation of Fauna and Flora in the Transvaal was approached, and both he and his staff gave invaluable aid to our project. This fell logically into two parts, viz. (1) anatomical studies which could be conducted on the dead animal, and (2) physiological investigations into the circulation in general and the cerebral circulation in particular, for which a live giraffe was required.

The second part of the project was so large an undertaking that at this stage we could only plan for a very limited pilot investigation. We intended to pass a catheter up the carotid artery into the base of the brain of the live giraffe, and then to take readings of the blood pressure in the brain at rest, and when the animal lowered and raised its head. This entailed an operation under local anaesthesia and then cannulating a carotid artery and advancing up the artery a 12-foot-long catheter to one end of which was attached an electrical instrument for recording pressures (Statham transducers). In order to ascertain the exact position of the tip of the catheter in the carotid artery, a small chip of radio-active cobalt was attached to it and this could be located by means of a Geiger counter.

To set up a laboratory and an operating theatre in the bush is no small undertaking, and to move about with such equipment is even worse. However, the Union Defence Department became interested in these studies, and provided us with transport, consisting of a jeep, a 3-ton truck, and a 1-ton truck with a water carrier. They also provided us with an excellent generator unit. The expenses were defrayed by a grant received from the Council for Scientific and Industrial Research, and I should also like to acknowledge the enthusiastic support we received from the Principal of the University of Cape Town, Dr. T. B. Davie. As Professor Heymans of Ghent University was the father, so to speak, of the carotid sinus reflex, we invited him to join us in our expedition. Unfortunately he was unable to come, but demonstrated his interest in our work by presenting us with a cheque for 5,000 francs.

THE PROBLEMS

The question was: In what respect does the height of the giraffe enter into the physiology of its circulation? A 21-foot column of blood will exert a hydrostatic pressure of almost 500 mm. of mercury. Similarly, the hydrostatic pressure of the column of blood from the giraffe's heart to his brain, in the erect position, is in the neighbourhood of 300 mm. of mercury—and this is the minimum pressure which will have to be maintained during diastole. During systole, higher pressures will be necessary to drive the blood up to and through the brain. While many had given this matter serious thought, no one had yet succeeded in measuring the blood pressure of the giraffe, let alone record the pressure in the animal's carotid artery.

There were other problems: The blood coming down in the neck veins must reach the right heart with considerable velocity, unless some special regulatory mechanisms are present. With the animal drinking, the relations are reversed. The head is now 7-8 feet below the heart, and the pressure on the cerebral vessels must be considerable. On the other hand, the return of the cerebral blood in the head-down position must present special difficulties.

Judging by human standards, the animal should show signs of fainting when suddenly elevating its head from the head-down position to the upright through a circle of 20 feet. In short, the adjustment of the arterial pressure in general and of the cerebral circulation in particular, with changes in posture of the head, presents a most fascinating problem.

* An address given at a meeting of the Cape Western Branch of the South African Medical Association on 15 April 1955 by Professor R. H. Goetz.

In the presence of such high hydrostatic pressures, the problems of the capillary circulation appear most intriguing. No wonder they aroused the interest of no less a worker than Krogh. In his well-known book on the anatomy and physiology of the capillary circulation, he suggested that the viscosity of the giraffe's blood must be very high. However, we have conclusively shown that this is not so: in fact, it is the same as in man. Others have suggested that the osmotic pressure of the plasma and the protein content must be high, for otherwise the giraffe would develop swelling of the ankles. This theory, too, was exploded; the proteins of giraffe blood are low rather than high by human standards. Our findings have by no means simplified the problem; on the contrary they have made it more puzzling.

RESULTS

Although various workers have speculated a great deal we have found no mention of blood counts and blood chemistry in the giraffe. Our examinations of the blood and of the urine revealed the following results:

Blood of Giraffe. Erythrocytes 11,950,000 per c.mm., haematocrit 47%, haemoglobin 17.8 g. %.

Leucocytes 8,500 per c.mm. (neutrophils 72%, mononuclears 26%, eosinophils 2%).

Platelets (from smear)—comparable in number, shape and size to human.

Coagulation time (in Kahn tubes at 29°C)—5 minutes.

Clot retraction (Macfarlane's method)—33%.

Sedimentation rate (Wintrobe's method with heparin)—25 mm. in 1 hour.

Viscosity of whole blood (Hess viscosimeter)—4.9 times that of water.

Serum proteins (copper-sulphate method)—4.3 g./100 c.mm.

Urine of Pregnant Mare Giraffe. Frog test and tests for protein and uric acid—negative. Tests for hippuric acid, creatinine, urea and phosphate—positive.

There are thus twice as many red blood-cells as in man, and in this respect the giraffe is similar to the camel and the llama. Obviously, this entails a bigger total surface, and consequently the oxygen exchange is more efficient.

The other puzzling points we have already mentioned, viz. the serum proteins of 4.3 g. % and a viscosity of 4.9 times that of water, which are the same as in man. For reasons already mentioned, one would have expected a higher concentration of serum protein. The osmotic pressure was not determined, but from the electrophoretic pattern we have no reason to believe that there are any other substances in the blood besides the proteins which could increase the osmotic pressure.

This leads to yet another aspect which calls for comment. A great deal of research is being devoted to producing hypertension in laboratory rats and dogs. In the giraffe we have an animal which normally has a high blood pressure; a study of its systemic and coronary blood vessels must be of great interest in relation to the causation of atherosclerosis and arteriosclerosis. Consequently, we were very curious to see if we should find any arteriosclerosis in its vessels. However, not a trace was found, even in our old bull. Perhaps the fact that the giraffe is herbivorous has something to do with the absence of arteriosclerosis. Be that as it may, our findings may come as a shock to those who try to achieve longevity by studying their diet. The life-span of the giraffe, despite the absence of arteriosclerosis, is only 30 years.

ANATOMICAL STUDIES

The study of the anatomy was relatively straightforward, and consisted in the dissection of a giraffe which was shot for us by the Department for the Conservation of Fauna and Flora. This gave us an idea of the size of the various structures with which we had to deal. The specimens themselves were carefully preserved and brought to Cape Town. Some will be sent to various museums and institutions in England, particularly that of the Royal College of Surgeons. We were especially interested in obtaining a head attached to the whole neck and the heart in order to dissect the cardiac, vagus and sympathetic nerves at leisure, and study their relation to the vascular system, particularly the carotid sinus. This work is still in progress.

The preservation of such huge specimens in the subtropical heat presented a rather special problem. However, a pit 8 feet long, 3 feet deep and 3 feet wide, when lined with plastic material

and filled with 320 gallons of formalin, constitutes a perfect tank for the preservation of anatomical specimens in the middle of the bush.

The size of some of the specimens is difficult to visualize. The head of the adult giraffe is 3 feet long from the nostrils to the occiput. The stomach is an enormous organ consisting of the omasum and the 2 parts of the rumen. The intestines measured 280 feet in length.

Dissection of the circulatory system proved of particular interest:

The heart of the fully-grown animal weighed 25 lb. (40 times that of man). The left ventricular wall was 7.5 cm. in thickness and the right ventricular wall 2.5 cm. The wall of the ascending aorta measured 1.5 cm. in thickness and that of the pulmonary artery 0.7 cm. The walls of the vessels in the legs were extremely thick—they resembled thick cords, whereas the lumen was pin-point in diameter.

Most impressive of all was the size of the jugular vein. Its diameter was well above 1 inch, even at its origin at the base of the head. It was provided with a set of tricuspid valves, which remain competent even with high pressures in the vein itself. Each of the tributaries of the jugular vein was provided with a set of very competent valves, which are capable of withstanding a high pressure in the jugular vein even with negative pressures in the tributaries.

In this respect our investigations contradicted the findings of Amoroso, Edholm and Rewell about the venous valves of the giraffe. It is difficult to see how they could have missed these valves. However, we were impressed by the difference between the preserved specimen and the live or the freshly-dead specimen. There is no mention made in the literature of the largeness of the jugular vein. This must be of some significance, since in standing—which the giraffe does for most of the day—the vein is collapsed. We feel that this vessel acts as a large reservoir in the head-down position.

Histological examination of the aorta, pulmonary artery and common carotid trunk showed that they consisted mainly of elastic tissue with few muscle bundles. The intima was smooth and thin and, although the specimen was from an old bull, there were no signs of any degenerative lesions. In the limb vessels conditions are reversed. Elastic tissue is sparse and the thickness is due to an enormously thick tunica media consisting entirely of smooth muscle.

The only histological investigations we have found in the literature are those of Franklin and Hayes, who studied the carotid artery of the giraffe by comparing sections obtained at the origin of the vessel with those taken from high up in the neck. They commented on the large amount of elastic tissue in the proximal section and demonstrated that in the higher-up section smooth muscle prevailed. (We found very little smooth muscle, particularly in comparison with the vessels in the lower legs.)

On these findings they concluded that the greater development of elastic tissue in the proximal segment presented an adaptation to the high hydrostatic pressure. However, it is the vessels in the lower extremities which have to withstand a hydrostatic pressure of 500 mm. Hg. Since they are fitted with a most powerful muscular coat, it seems reasonable to assume that it is the muscle and not the elastic tissue which copes with the hydrostatic pressure. We see therefore that the histological structure of the vessels is but a reflection of their function.

Unexpectedly, one of the animals shot was found to be pregnant. This gave an opportunity of comparing the relative size of the limb and neck arteries in both foetus and adult. This work was done by Dr. E. N. Keen, who has also been dissecting the foetus in order to study the foetal circulation. This is apparently the first recorded occasion that this has been done. From a comparison of these vessels, inferences can be drawn about the growth of the arteries in the two sites in this species.

The method used was measurement of the cross-sectional area of the arterial wall. Briefly, the results showed that the metatarsal artery of the adult was 15 times as massive as that of the foetus, while the increase in the size of the carotid artery amounted to about half as much—8 times, to be exact. Such a difference strongly suggests that the tremendous development of the musculature in the limb arteries is a post-natal specialization and presumably a response to the hydrostatic pressure presented to these arteries in the giraffe.

A few of Dr. Keen's findings on the foetal circulation may

perhaps be appropriate here. The umbilical cord contained 2 arteries and 2 veins besides the allantoic duct. The ductus venosus was not functioning, being represented by a fibrous cord. The ductus arteriosus was found to be tightly contracted and very thick-walled. The division of the posterior caval stream followed the plan discovered and described by Barclay and others in their work on the foetal circulation in the lamb. The foramen ovale consisted of a tubular structure opening into the left atrium through a finely fenestrated aperture. From an anatomical point of view the division of the posterior caval stream appeared to be about 40% to the right atrium and 60% to the left.

The anatomy of the cerebral circulation was studied by means of arteriograms. The carotid artery was cannulated, 50 c.mm. of 70% diiodone injected, and a series of pictures taken (see Fig. 1).

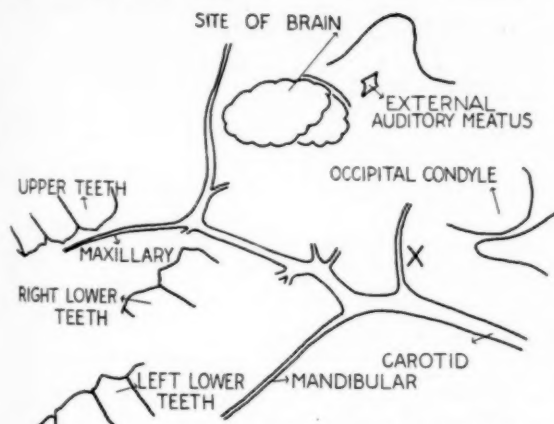


Fig. 1. Arteriogram of the giraffe's head. In the giraffe the brain is supplied by branches of the external carotid artery. The large branch of this artery, marked X, forms an anastomosis with the vertebral and occipital arteries without contributing to the blood supply of the brain. It has been identified by some authorities as the internal carotid artery.

This allowed a better identification of the main circulatory tree and its ramifications than any anatomical dissection could have done.

THE LIVE GIRAFFE

The second part of our programme was more difficult. Since none of us possessed any experience in the handling of the live

giraffe, we first had to find means of catching the animals, and then devise means of carrying out the investigations we had planned to do. Here the size of our 'patient' entered the picture. A fully-grown giraffe weighs well over 2,000 lb. and is an extremely powerful animal.

We knew also that, despite its enormous power, the giraffe is a very sensitive animal, and when chased or captured, it may faint or die from shock. In struggling to escape, the animal can readily break its neck. Big-game hunters will tell you that only one out of every 10 is taken alive, and that it is customary to administer an immediate injection, presumably of adrenalin, in order to combat shock.

It seemed logical to try curare or one of its derivatives. By human standards, the dose for an adult giraffe was judged to be about 200 mg. This proved to be correct. However, the introduction of so large a dose as a liquid was impossible, and it was therefore necessary to give it in a solid form. A suitable binding medium had to be found, to bind the powder into a small bulk which could be attached to a bullet or an arrow. This mixture had to set quickly to prevent it from disintegrating in flight, and had to be sufficiently hygroscopic to dissolve rapidly when lodged in the tissues, and thereby make the curare available for absorption. Numerous substances were tried, but none seemed to answer all these requirements. Then we found the ideal substance—icing sugar. When this is mixed with the curare, a paste is formed which sets in a short period and can be fixed to the bullet or arrow. It dissolves rapidly when introduced into the body and readily liberates the tubocurarine.

We constructed special arrow-heads, but our archer did not find it easy to shoot a giraffe racing at 30-40 miles an hour over the veld and passing at about 40-50 yards' distance, or to shoot it from a jeep racing along past the giraffe at 35 miles an hour. Although he hit a few animals, the arrows were deflected by their inch-thick hides. Our jeep soon broke down, and we then had no option but to use a bullet. A .303 cartridge was taken apart and some of the lead of the bullet removed to make room for the curare. A collar left at the back ensured that the curare would not be lost in flight. To compensate for the lighter weight, three-fifths of the cordite sticks were removed and the cartridge re-assembled. Such a bullet, when shot into the hindquarters of the animal, produces paralysis within 45 minutes.

Great interest in this method of ours of capturing animals has been shown by a number of scientific and other investigators. Gamekeepers particularly are very anxious to use such a weapon in order to catch animals for marking and investigating them for all sorts of reasons, particularly for parasites. The method could also be used for the study of migratory habits.

The specially-prepared curare bullet, however, still proved to be a dangerous missile. Unless placed in the proper area, it will probably kill the animal. As the animal is difficult to track and invariably keeps a distance of 50 yards from hunters, the placing of the bullet is not always easy. Bow-and-arrow may therefore still be the safer method. We feel that the cross-bow instead of the long-bow would be more successful.

Once the animal was paralysed, hobbles could be fixed and a hood drawn over its head. This prevented it from making any purposeful kicks and it was not distracted by its surroundings. We had brought with us 3 tons of builders' steel-scaffolding. With this we then erected a pen around the animal. When the antidote to curare was injected and the animal was able to get up, it found itself in a cage, which could be adjusted according to our needs.

We were rather uncertain where to place the electrocardiograph leads, but we must have chosen fairly classical 'giraffe' leads, for the 3 electrocardiograms taken correspond well to the 3 human standard leads. The heart rate was 100 per minute, but perhaps the most interesting feature when one remembers the size of the heart is the P-R interval of only 0.18 seconds (Fig. 2). The only area where the heart sounds were properly heard was the root of the neck. There the sounds are comparable to the human; the first sound is slightly split—some might even call it a click. The respiratory rate was 15 per minute.

In expectation of high blood-pressures, a special baumanometer had been built for us measuring up to 600 mm. of mercury (it was presented by Baum & Company, New York, through the courtesy of Messrs. Gurr Surgical Instruments). We had no difficulty in cutting down on the carotid artery and inserting our

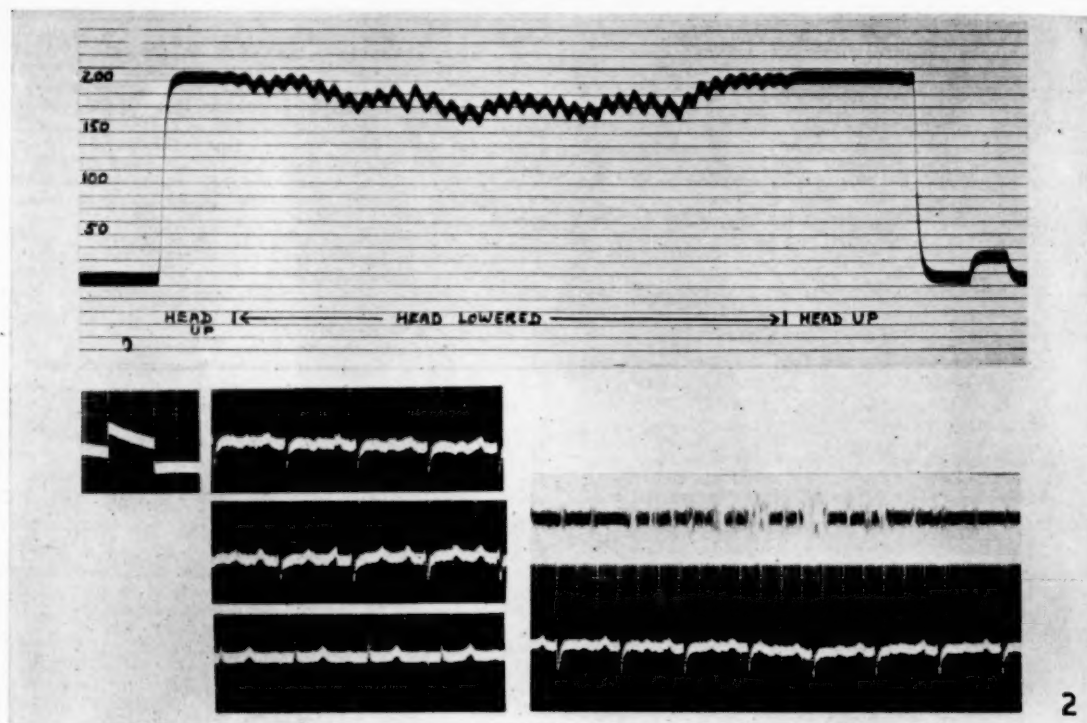


Fig. 2. Blood-pressure tracing, electrocardiograms and phonocardiogram of the giraffe. The blood-pressure tracing was taken with the tip of the catheter at the base of the brain in the common carotid artery. Note the drop in pressure and increase in pulse pressure on lowering the head. The electrocardiograms show the 3 'standard' leads and the 2nd lead with the phonocardiogram, which also shows the respiratory sounds. Of particular interest is the short P-R interval in view of the enormous size of the giraffe's heart.

catheter, after a local anaesthetic had been given. Eight feet of the catheter were inserted with the strain gauge attached. The Geiger counter located the chip of cobalt in the catheter tip at the base of the brain. The pressure measured 200 mm. Hg.

The blood-pressure tracing taken with the catheter at the bifurcation of the carotid shows that in our animal the pressure in the upright position was 200 mm. Hg. As soon as the head was lowered, the pressure—quite contrary to all expectations—began to drop, reaching 175 mm. Hg. It remained at that level so long as the head was lowered, only to rise again as the head went up. As the pressure dropped, the pulse pressure increased (see Fig. 2).

The work carried out so far has yielded many new but still apparently disjointed facts, some of which have helped to clarify existing misconceptions about the circulation in the giraffe. We

are very conscious of the fact that we have only touched on the fringes of this vast subject.

However, we hope that we have started the ball rolling and shown the lines along which future research in this field can be conducted.

The authors would like to place on record their appreciation of the assistance of the other members of the expedition, namely, Mr. T. J. Steyn, Director of Nature Conservation, and his staff in the Transvaal Department of Fauna and Flora; Dr. M. J. N. Meeser, State Veterinary Surgeon; Carl C. Goosen, Technical Assistant; Miss Rhian Jones, Secretary; G. C. Adams and P. A. G. le Roux of the University of Cape Town Film Unit. The address was accompanied by lantern slides and a colour film illustrating the expedition and its results.

ANNUAL REPORT OF THE CHAIRMAN OF FEDERAL COUNCIL FOR THE YEAR ENDED 30 JUNE 1955

Obituary. It is with deep regret that we have to record the loss through death of the following members: Drs. H. G. Atherstone, P. Bayer, A. Bonfa, H. E. Brown, W. Cooper, M. Douglas-Drummond, C. J. du Plessis, G. H. du Toit, J. L. Fluxman, G. Goosen, R. D. Gous, J. R. Jardine, H. Lee, G. D. Liebenberg, A. L. McDonnell, T. D. McNab, G. A. S. Madgewick, R. E. Meaker, G. F. W. Moon, B. Morrison, W. H. Palmer, J. Pasvol, W. A. Pocock, T. Lindsay Sandes, H. H. E. Schulz, J. D. Scott, F. H. Scroggie, A. B. Theron and D. J. van der Westhuizen.

Membership. During the past year there has been an overall

increase in membership of 192, the total membership now being 5,223. In addition there are 121 student members. Members are distributed among the various Branches as follows: Border Branch 189; Cape Eastern Branch 54; Cape Midlands Branch 199; Cape Western Branch 1,166; East Rand Branch 208; Griqualand West Branch 86; Natal Coastal Branch 468; Natal Inland Branch 185; Northern Transvaal Branch 481; Orange Free State and Basutoland Branch 355; Southern Transvaal Branch 1,335; South-West Africa Branch 63; Transkei Branch 85; Unattached Members 319; Emeritus Members 22; Honorary Members 8.

Honours. During the year the Council honoured the memory of the late Dr. Karl Bremer by the posthumous award of the Association's Gold Medal in recognition of the fact that Dr. Bremer had during his lifetime 'rendered service of outstanding value to the Association and the medical profession'. The Council also honoured Mr. L. R. Broster, F.R.C.S., of London, by the award of the Association's Bronze Medal in recognition of his work for the Association overseas. A further award of the Association's Bronze Medal was made to Dr. D. P. Marais in recognition of his work for the Association in the Union. The honour of Emeritus Membership of the Association was granted to Dr. Hamilton W. Dyke, formerly of Basutoland, and Dr. J. H. Harvey Pirie of Johannesburg, in recognition of their services to the Association, while Dr. M. Bleiden was granted Honorary Life Membership.

At the meeting of the Council held in Cape Town in April, it was agreed that the Association's Bronze Medal be awarded to Prof. S. F. Oosthuizen, President of the South African Medical and Dental Council, and to Prof. L. J. te Groen, Honorary Treasurer of that Council, both of whom had given sterling service to the profession through the Association and the Council.

The Federal Council further agreed that Dr. R. V. Bird, Vice-President of the Council and a member of the dental profession, and Miss C. A. Nothard, R.R.C., President of the South African Nursing Council and a member of the South African Medical and Dental Council, both be granted Honorary Membership of the Association. The presentation of these awards will take place at the forthcoming Congress in Pretoria. At the same time the Hamilton-Maynard and Leipoldt Memorial Medals will be presented.

Federal Council Meetings. Federal Council has met on two occasions during the year under review, the first meeting being held in Pretoria and lasting 3 days from 28 to 30 October 1954. The second meeting was held in Cape Town and lasted 3 days from 16 to 18 March 1955. The average attendance at the meetings was 50 members. The Executive Committee has met on two occasions, both being on the day preceding the Federal Council meetings. The major portion of the work of this Committee was conducted by correspondence.

The Annual General Meeting was held in Pretoria on 28 October 1954, and Dr. L. E. Lane was installed as President by Dr. J. P. Collins. The usual form of business was also transacted. The meeting was adjourned and convened during the evening in the ballroom of the Hotel Assembly, Pretoria, when delegates were welcomed by His Worship the Mayor and Dr. Lane delivered his Presidential Address.

Congress. No Congress has been held during the year under review.

Committees of Council. The Head Office and Journal Committee continues to render service in looking after the administration and financial affairs of the Association. The Federal Ethical Committee has had no work of importance during the year under review; but the booklet *A Guide to the Maintenance of Ethical Standards*, with the rules regarding ethical conduct, was published in both languages during the year and circulated to all members.

The Central Committee for Contract Practice has continued to deal with applications for approval from new Medical Aid Societies, as well as dealing with a considerable amount of routine work which falls to it in the supervision of this form of practice. In this it is being assisted by the appointment of Mr. O. W. Johns as Public Relations Officer in Johannesburg.

The Parliamentary Committee has continued to watch the interests of members so far as legislation is concerned, and has

taken up with the legislature or the Government Department concerned such matters as have come to its notice. A number of Sub-Committees of Council have done useful work in the special spheres allocated to them.

Journal. The weekly publication of the *South African Medical Journal* continues to meet with success. The Association's quarterly publication, formerly known as the *South African Journal of Clinical Science*, now appears under the title of the *South African Journal of Laboratory and Clinical Medicine*.

Branches and Divisions. The Branches continue to hold regular meetings, and in most cases the Divisions are serving a useful purpose in bringing members together.

Groups. The Groups have continued to perform the tasks for which they were established.

British Commonwealth Medical Conference. After a lapse of three years a Conference was convened in Toronto to take place in the week preceding the Joint Meeting of the British and Canadian Medical Associations in June 1955. This Conference is one of Secretaries of Commonwealth countries where matters of mutual interest to the National Associations are discussed. The Secretary, Dr. Tonkin, represented our Association and read a paper on 'The Medical Care of the African'. Dr. Tonkin also represented the Association at the Joint Meeting.

Following this meeting, a conference of Secretaries of National Medical Associations was held in New York, convened by the World Medical Association. The Secretary was also present at this meeting.

World Medical Association. The Eighth General Assembly was held in Rome in September 1954, and the Association was represented at the meeting by Dr. L. I. Braun of Johannesburg and Dr. Emilia Krause of Bloemfontein.

Finance. The funds of the Association increased by £5,205 during 1954, and at 31 December 1954 they stood at £32,409.

Benevolent Fund. There are now 22 beneficiaries of this Fund. During 1954 an amount of £2,315 was paid out in benevolence. The Accumulated Funds now stand at £40,664.

Library Grants. Grants of £250 each were made to the Universities of Cape Town and the Witwatersrand during 1954, and members are reminded that both libraries are at their service either by personal visit or by postal enquiry.

Medical Agencies. At the end of 1954 the Association's Agency in Durban was closed owing to insufficient support. The Agencies in Cape Town and Johannesburg are, however, receiving greater support, but members are reminded that the Agencies exist only for their assistance and are urged to make use of the facilities offered.

Medical Insurance Agency. The work of this Agency continues to grow, and the Association does all that it can to encourage its members to protect themselves and their practices by adequate cover afforded by the special Doctors' Liability Policy arranged by the Association. Members are also becoming more aware of the savings to be effected by the special Motor Car Insurance Policy which has been arranged for their benefit. Members are urged to make more use of the advice and facilities offered, and are reminded that the activity of this Agency adds to the Association's funds by means of commissions earned.

Conclusion. The Council would record its appreciation of the work of the Head Office and Journal staff and of all the honorary officials and Committees of the Association.

A. W. S. Sichel
Chairman of Council

Cape Town
August 1955

ASSOCIATION NEWS : VERENIGINGSNUUS

MEETING OF THE GRIQUALAND WEST BRANCH

At a meeting of the Griqualand West Branch of the Association held at the Kimberley Hospital on 28 July 1955, Mr. N. Kretzmar (in the absence of Dr. Stephens who was on leave) took the Chair and 18 members attended.

Motor Industry Sick Benefit Fund. It was decided *not* to recognize this society at all for the following reasons:

(a) The Branch is categorically against the principle of the closed panel.

(b) The remuneration, particularly in regard to operative procedures, is inadequate. To quote one example, the fee for a thyroidectomy, including the anaesthetist's and assistant's fees, is 10 guineas.

It was pointed out that recognition of this type of Society is unfair to Medical Aid Societies, who might be tempted to become similar Sick Benefit Funds. The members of the Branch are to be asked by circular to honour the resolution by not applying

for any posts, if advertised, in this Motor Industry Sick Benefit Fund.

Dr. J. Botha gave a few impressions of the Practice of Medicine in England, with particular reference to conditions as they exist in Bath, where he was recently stationed. Numerous questions

were put from the floor and these were suitably answered.

Mr. N. Kretzmar described briefly the line of treatment to be adopted in haemorrhages and perforations of duodenal ulcers. Conservative treatment was particularly stressed. Operation is advisable if medical treatment fails.

WORLD MEDICAL ASSOCIATION : CONFERENCE OF NATIONAL SECRETARIES

At the conference held in New York on 27 and 28 June, referred to in the *Journal* of 6 August (page 756), the documentation system and questionnaire method of the WMA Secretariat were explained and a discussion took place concerning the way the national secretaries would cooperate in making the questionnaires useful. In particular, if complete answers were not available immediately, notice to that effect, or partial answers, are helpful.

A brief discussion of the status of the international medical law proposal was held. The plan to establish an emblem to protect civilian doctors and medical units in civil defense was outlined.

A lengthy discussion took place on the possibility of the WMA setting up a central repository for medical credentials. The importance of such a proposition as well as its difficulties were realized.

There was considerable talk about the services the WMA could render its member associations. The following were some of the topics mentioned as being of great help to these associations: (a) Liaison and contacts in Geneva with other international organizations. (b) Information about the activities of international organizations directly affecting the practice of medicine. (c) Certain questionnaires. (d) Surveys of medical social security in various countries.

PUBLIC RELATIONS

It was suggested that better public relations were needed. Among the ideas presented were:

(a) Regular press releases on the activities of the WMA for publication in national journals. Sending of press releases direct to the Editors of national medical journals.

(b) Request for a column in national medical journals for WMA news.

(c) Informative documents issued by the WMA to be sent to the editors.

(d) Speakers to talk on the WMA on the programmes of national and local meetings.

(e) Assistance to underdeveloped countries, stressing activities of interest to the individual member.

The status of the *World Medical Journal* was discussed. The Editor stated he wished the *Journal* to have an 'international flavour'. He appealed for help from the correspondents, national secretaries and members of the Council. He stated he wished the *Journal* to be the 'Voice' of the WMA.

The following specific suggestions were made: (a) More pictures in the *Journal*. (b) Articles on medical public relations. (c) Relationship between governments and the medical profession. (d) Relationship of doctors within the profession.

The circulation of the *Journal* was commented on. It was brought out that it was planned that at least 5% of the membership of national associations would be on the mailing list. Some countries are receiving far too few copies. An increase in circulation would attract further advertising and further advertising would permit a larger *Journal*.

The organization and functioning of the United States Committee was described. The U.S. Committee has increased the number of its members to nearly 5,000. There are both individual and corporate memberships. At present this Committee supports

the Secretariat and the *World Medical Journal*. Eventually, it is anticipated that with all member nations paying a subscription rate of one Swiss franc per member of the national association, the total dues received will support all the routine activities of the association and supporting committees will then have an opportunity to support specific projects of the association.

INTERNATIONAL CODE OF MEDICAL ETHICS

The matter of modification of the *International Code of Medical Ethics* was considered. The general consensus seemed to be that it is the spirit of the Code which is important, not just the words themselves; that this Code has had wide distribution and it would not be advisable to change it; that in any code the fundamental factor is interpretation; any code that is adopted should be as simple as possible with the understanding that each national medical association may add to it those special details that are necessary in that country.

A number of regional meetings were brought to the attention of the group. It was felt that these regional meetings should be arranged under the auspices of the WMA.

It was suggested that regional meetings could be held in conjunction with the General Assembly; that meetings of scientific organizations could be held simultaneously with the General Assembly; that the General Assembly one year should be of an organizational nature and the next year of a scientific nature.

It was finally recommended that future meetings of national secretaries be held from time to time on an *ad hoc* basis at the Secretariat.

The United States Committee entertained the group at a luncheon on both days and the American Medical Association entertained it at dinner on the first evening.

LEGEND

The legend, which should have appeared under the photograph of Secretaries of National Medical Associations attending a meeting on 27 and 28 June 1955 at the office of the World Medical Association, New York, on the occasion of the British Commonwealth Medical Conference and the Conjoint Meeting of the British and Canadian Medical Associations held at Toronto, was by error omitted from the issue of the *Journal* of 6 August 1955 (p. 756). Those shown in the photograph were:

Top row, left to right. Dr. A. H. Tonkin (Secretary, Medical Association of South Africa), Dr. A. F. W. Peart (Assistant Secretary, Canadian Medical Association), Dr. R. A. Elliott (Secretary, British Medical Association, New Zealand Branch), Dr. G. F. Lull (Secretary, American Medical Association), Dr. S. S. B. Gilder (Editor, Canadian Medical Association Journal), Dr. Walter Hedgcock (Assistant Secretary, British Medical Association), Dr. Nimalasuria (Secretary, Ceylon Medical Association).

Front row, left to right. Dr. Angus McCrae (Secretary, British Medical Association), Dr. Louis H. Bauer (Secretary General, World Medical Association), Dr. Austin Smith (Editor, *Journal of the American Medical Association*—Chairman), Miss M. Natwick (Executive Secretary, World Medical Association), Dr. A. P. Mittra (Secretary, Indian Medical Association).

PASSING EVENTS : IN DIE VERBYGAAN

Dr. Eric Samuel, B.Sc. (Wales), M.D. (Lond.), F.R.C.S. (Eng.), F.F.R. (Lond.), D.M.R.E. (Camb.), of Johannesburg, has been appointed by the Royal College of Surgeons of England as Hunter-

ian Professor for the ensuing year. The subject of his Hunterian lecture will be *The Anatomy of the Bileducts in Relation to the Post-cholecystectomy Syndrome*.

Mr. Cyril Kaplan, M.B., Ch.B. (Cape Town), M.Ch. Orth. (L'pool), F.R.C.S. (Eng.), of Durban, has been awarded a research grant by the South African National Tuberculosis Association for the purpose of investigating bone and joint tuberculosis in Durban.

Dr. Charles M. Sarkin, F.R.C.S. (Edin.), has returned from Great Britain where he did postgraduate work, and is now practising as an Orthopaedic Surgeon at 67 Jenner Chambers, Jeppe Street, Johannesburg (Telephone: 23-2003).

BOOK REVIEWS : BOEKRESENSIES

MEDICAL HISTORY: GREY'S HOSPITAL, PIETERMARITZBURG

A Hospital Century. Grey's Hospital Pietermaritzburg 1855—1955. By Alan F. Hattersley, M.A., F.R. Hist. S. Pp. 129 with 11 illustrations. 21s. Cape Town: A. A. Balkema. 1955.

Contents: 1. Origins of Medical Services in South Africa. 2. The Foundation of Grey's Hospital. 3. Cradle Days of the Hospital. 4. Grey's under Municipal Management, 1863—77. 5. The Board of Trustees, 1877—1922. 6. Grey's Hospital under Provincial Management. 7. The Master Plan Emerges. Index.

Grey's Hospital, Pietermaritzburg, is the oldest existing hospital in South Africa still on its original site, having opened its doors to patients in May, 1857. Its closest rivals for this honour are Grey's Hospital at King William's Town (11 June 1859) and the new Somerset Hospital in Cape Town (23 August 1862). The old Somerset Hospital, opened in 1818, was closed down in the 1930s. The Albany Hospital, Grahamstown, was burnt to the ground in the 1820s and the Provincial Hospital, Port-Elizabeth (10 September 1856) is no longer on its original site.

Founded by Sir George Grey as part of his 'conquest by civilization' plan for the Natives, Grey's Hospital, Pietermaritzburg, was the first medical institute of any moment beyond Grahamstown; the old stone walls incorporated in the present building eloquently testify to its age. If they could speak, the whole engaging tale of Natal's history would unfold, for Grey's has served its community through a lusty colonial childhood of epidemics and Zulu wars to full-blown nationhood. By 1880 its annual intake was 600 patients, and thereafter this figure remained fairly constant, in marked contrast to the Durban Point Hospital, of which the intake increased from 600 to 1,240 between 1884 and 1890. In a way, therefore, Grey's Hospital was relegated to the background in Natal some 60 years ago and, with the opening of the magnificent Edendale Hospital for non-Europeans outside Pietermaritzburg some years ago, it was once more made to feel its age. But—make no mistake about it—there is a glorious tradition woven into its rough-hewn stone walls and crooked passages. Most of Natal's famous coterie of doctor-civil servants have trod its floors—Surveyor-General Dr. Percy Sutherland, who supervised its erection, the Education-Superintendent Dr. R. J. Mann, the Anglican the Rev. Dr. Callaway, the magistrate Dr. Ben Blaine, and the rest. We read in this book of Dr. Samuel Gower, the lispng, lovable district-surgeon of Pietermaritzburg, who was the hospital's first surgeon and who wrote of his post:

Like lawyers wanting in effrontery
Or soldiers sent to battle weaponless
Or shopkeepers whose shelves are short of goods
Or clerks without a pen behind each ear
Or poets at a loss for images
Such is the surgeon of Grey's Hospital.

Another character was Dr. J. F. S. Allen, 'sole visiting surgeon of the hospital from 1876 to 1900', as the plaque in the entrance-hall reads, who was once called to a patient chased up a tree by an irate son-in-law. It was this Dr. Allen who cuffed the ears and tore the newspaper of the other Dr. Allen of Pietermaritzburg in a railway carriage in 1888, after the one had opened the other's *Lancet*, which has been addressed merely to 'Dr. Allen, Pietermaritzburg.'

Professor Hattersley's book is not all anecdote, though; it is a serious chronicle of a great hospital with a tradition dating back to the very beginnings of the community it serves. Natal, and Pietermaritzburg in particular, can count their blessings in having the services of an accomplished social historian such as Professor Hattersley. Indeed, thanks mainly to his scholarly writings, Natal is unique in this respect and far ahead of the rest of South Africa.

It is no exaggeration to say that *A Hospital Century* is the first

serious and authoritative venture into South African medical history and, as such, this publication is something of an event. The book can be recommended unreservedly to all who desire a dip into the past, to gain a glimpse of the beginnings and growth of a great South African hospital. Professor Hattersley's contribution is made the more acceptable by the elegance of the volume, such as we have come to associate with the publishing house of Balkema.

E.H.B.

AN INTRODUCTION TO GENERAL PRACTICE

An Introduction to General Practice. By D. Craddock, M.B., Ch.B. (Liverp.). D. Obst. R.C.O.G. Pp. 553+xi. 42s. London: H. K. Lewis & Co. Ltd. 1953.

Contents: 1. The Surgery. 1. Administration. 2. The Patient who asks for a Tonic. 3. The Patient with no Organic Disease. 4. 'Trivial' Complaints. 5. The Patient with a Headache. 6. Common Disorders and their Management. 7. Heart Disease in General Practice. 8. Common Disorders of the Skin. 9. The Rheumatic Diseases. 10. Minor Surgery. 11. Fractures and other Orthopaedic Problems. 12. The Round. 12. Common Acute Conditions and their Management. 13. The Acute Abdomen in General Practice. 14. Old People. 15. Mother and Child. 15. Antenatal Care. 16. The Management of Normal Labour in the Home. 17. Abnormal Labour. 18. Postnatal Care of Mother and Child. 19. Breast Feeding. 20. Artificial Feeding and Disorders of the Gastro-Intestinal Tract in Infancy. 21. The Feversish Child. 22. The Nervous Child. 23. The Child who won't eat. 24. The Naughty Child. 25. Common Disorders of Women. IV Family Planning. 26. Sterility, Subfertility and Recurrent Abortion. 27. Contraception. 28. Disorders of Sexual Life. V. Family Planning. 29. Common Disorders Recently Recognized. 30. Problems of Life and Death. 31. Pain and its Relief. 32. Drugs and Potions. 33. Dietetics. 34. The Doctor and the Law. Appendix. Index.

This is one of the best books of its type that the reviewer has read. Certain chapters concern general practice under the National Health Service in Great Britain, and these are not applicable in their detail to practice in South Africa.

The earliest chapters include one on 'The Patient Who Asks for a Tonic', and another on 'Neurosis in General Practice'. These subjects are treated extremely well, the author showing an excellent understanding of the importance of making a positive diagnosis of neurosis, and at the same time of quickly dealing in the safest possible way with the patients coming to see him in general practice. On page 4, the author states that the conventional academic approach to history-taking must be forgotten in general practice, and yet he shows that he really does not mean this when at frequent intervals throughout the book he emphasizes the importance of spending time on the patient, particularly in taking a full history.

The approach to diagnosis is well balanced throughout. For example, in introducing the chapter on dyspepsia he quotes the commonest causes, a peptic ulcer and neurosis, an approach which gives the general practitioner a sense of balance when a dyspeptic patient consults him. There is no lengthy tabulated list of causes.

On the technical side, the author presents much evidence and advice that might be disputed and that will change from year to year, but this technical aspect is the easiest for the general practitioner to read about in other books and journals and thus to form his own conclusions. It is approach that is most important for the student to understand when he enters general practice.

A further example of balance is seen under the section on diabetic coma, where the author emphasizes the importance of the clinical and technical aspects of diagnosis, but as far as treatment is concerned, he does no more than to advise the immediate injection of a large dose of insulin, followed by the admission of the patient to hospital. The details of treatment in hospital are not introduced.

Other examples of good judgment could be quoted. He mentions that the methonium compounds in the treatment of hypertension are dangerous drugs and must not be used lightly. He states that most of the diagnostic problems in practice are resolved by a thorough examination, including history. Under the heading of toxæmia in pregnancy he emphasizes not so much that there is a

certain level of blood pressure which is pathological, but that 'a slight rise of blood pressure above the patient's own normal in that pregnancy is an early sign of toxæmia'.

The section on blood diseases is perhaps too brief, and the chapter on pain, which at present appears near the end of the book, might well have been placed very much earlier, if only for the sake of the emphasis which its commonness as a symptom would warrant.

This is a book which every medical student ought to buy, and to

read parallel to his medical school teaching. It should also be read by all teachers of medical students. To reiterate: On the technical side, certain treatments and diagnostic aids will inevitably become out of date, but the book's main contribution is not in its technical advice, which is considerable in its detail, but in its approach and in its successful attempt to point out the balance and judgment that are required of the practitioner in general practice.

G.A.E.

CORRESPONDENCE : BRIEWERUBRIEK

SPEECH THERAPY AS A HOSPITAL SERVICE

To the Editor: In his letter published in the *Journal* of 23 July 1955 Dr. Franklin Bishop¹ pleads for a speech therapy department as an essential part of a modern hospital. I am glad to be able to say that at Groote Schuur Hospital, Cape Town, we have, for 9 years past, been working in close touch with the speech therapists treating these cases in the suburban schools. Owing to cost of frequent journeys to hospital, it has not yet been practicable to have children brought from distant homes to some central hospital for speech therapy, but a special hospital speech-therapy department has been under discussion for some time. An equally great need is for an orthodontic clinic and this we hope to combine with a speech-therapy clinic. At present the orthodontist is able to deal with only occasional cases.

The plastic department at this hospital is at present reviewing the orthodontic and speech results of some 350 cases operated on during the past 9 years, in which the techniques mentioned by Dr. Bishop have been used, and some discarded, and we hope to show that much of the talk of bad speech-habits and abnormal cerebral patterns is really a cloak for inadequate surgery. Without a sufficiently long and mobile palate it is unfair to expect the speech therapist and the pupil to produce good speech.

D. S. Davies

National Mutual Buildings
Church Square
Cape Town
1 August 1955

1. Bishop, B. W. F. (1955): *S. Afr. Med. J.*, **29**, 720.

PSYCHIATRIC DIAGNOSIS

To the Editor: The startling disclosure regarding 'psychological investigation and treatment' of paranoia, paraphrenia and hypomania¹ at the General Practitioner level merits elaboration. If this statement could be substantiated statistically, the *Journal* would be making a fundamental contribution to therapeutics.

Cynicus

Pretoria
26 July 1955

1. de Villiers, J. J. (1955): *S. Afr. Med. J.*, **29**, 712 (23 July).

MEETING OF WHO REGIONAL COMMITTEE FOR AFRICA

To the Editor: Will you please publish the enclosed letter in the *Journal*? If anyone is interested, and would like to act as our representative, would you please ask them to communicate with me.

South African Society of Medical Women
38 Ennis Road
Park View
Johannesburg
27 July 1955

Mollie B. Barlow
Chairwoman

Enclosure

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

Dear Dr. Barlow: The World Health Organization is holding the fifth Session of its Regional Committee for Africa at Tananarive, Madagascar, from 19-23 September 1955, and have invited the Medical Women's International Association to send a representative.

Would it be possible for your Association to find amongst its

members a suitable person who would be willing to attend this meeting on our behalf and report on it? I am afraid we have such small resources that we are not able to pay expenses, but you may perhaps know of someone who would be interested in going.

(Signed) Janet K. Aitken

30a Acacia Road
London, N.W. 8
18 July 1955

SUDDEN DEATH FOLLOWING AN INJECTION OF PENICILLIN AND STREPTOMYCIN

To the Editor: As a warning to my fellow practitioners, and in order to add another case to the records of this condition, which seems to be more and more frequently reported,¹ I want to report a case of death with dramatic suddenness after an injection of penicillin and streptomycin.

An elderly European female of fairly good general health, consulted me about an infected corn on one toe. I opened and dressed the small abscess, and she expressed fear of septicaemia, which she had had before when her eye went septic after an operation. I proposed to give her an injection, and on a question from her I told her that I intended to give her penicillin and streptomycin. Hereupon she remarked that she had had those drugs often before, and was quite pleased. She had a slight attack of hay-fever at the time, but she never mentioned any allergic response either to penicillin or any other drug.

I thereupon proceeded to give her 800,000 units of freshly mixed Crystalline Penicillin G, containing 200,000 units of procaine penicillin, plus 1 gram of streptomycin. The injection was given in the usual site in the right buttock, and caused no immediate discomfort.

About one minute afterwards she said: 'I am already beginning to taste the penicillin in my mouth'. I said that it was strange but she persisted that it was so, and walked into the waiting room. I noticed that something was wrong immediately and 15 seconds later I went into the waiting room and found her completely unconscious in a chair. Her whole body went stiff, she was flushed and sweating, respirations were laboured and spasmodic, and her extremities were cold and no pulse could be felt.

I immediately drew up an injection of 100 mg. of Anethan and 2 c.c. of Coramine (the first things I could lay my hands on), but she was already cyanosed and no veins could be found. I gave the injection intramuscularly, and applied artificial respiration after inserting an airway. The bronchi appeared very constricted. By this time the patient was obviously dead. I judge that death set in roughly 3 to 5 minutes after the time the injection was given. There was thus no time for even the most heroic measures, especially as the event was not anticipated.

I reported the incident to the police immediately. The relations did not want an inquest, and the Magistrate was willing to accept a certificate of death due to natural causes. Consequently no post mortem was done.

A colleague has suggested the possibility of a coronary thrombosis, but I am convinced from my observations that it was a case of anaphylactic shock due to the injection of penicillin into a hypersensitive subject.

J. G. Botha

'La Mer'
Plettenberg Bay, C.P.
18 July 1955

1. Williams, D. A. (1955) *Brit. Med. J.* 1469.